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Feb-10, 1933

A HEALTH SURVEY OF 86 CITIES

*Presented to the Dental
Library in memory of
William H. Bates - late Dean
of the Dental School -*
BY THE
RESEARCH DIVISION

OF THE

American Child Health Association

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LETTER OF TRANSMITTAL

THE HONORABLE HERBERT HOOVER, *President*,
American Child Health Association,
Washington, D.C.

MY DEAR MR. HOOVER:

There is submitted herewith the final report on a Health Survey of 86 Cities, prepared by the Research Division of our Association.

This survey was undertaken at your suggestion in the late autumn of 1923. Its purpose was to secure facts from which there could be expressed a comprehensive picture of child health in the United States. The field work was carried out by five men of training and experience in public health and occupied the period from January to June 1924. The time elapsing from that date to the present has been spent in tabulating the information, analyzing the material and writing the report.

The report carries an introduction describing how the work was done. Chapters in Section II are devoted to the practices in the different lines of health work in the cities as a whole. Section III contains sketches of each of the 86 cities. In the final section will be found constructive suggestions for the organization of health work in a city of 50,000 population.

The outstanding facts of the survey are these:

1. Each city was found to be carrying on some organized effort for bettering the health of children although the amount on the average is perhaps not over half of what is to be expected in a reasonable health program.

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2. By utilizing the scientific knowledge now at hand it is possible by better organization to increase materially the health protection of children at no great increase in cost.
3. The greatest needs are well-trained health officers devoting undivided attention to the task, standardization of methods, more thought in explaining health work to the public, and better team work among public and private health agencies.

It may be added that the results of the survey have already been of service to communities in bringing about changes for the better.

Respectfully yours,

S. J. CRUMBINE, M.D.
General Executive.

ACKNOWLEDGMENT

In the preparation of this volume the Research Division has been given generous and whole-hearted assistance by fellow members of the staff of the American Child Health Association, particularly, the Division of Health Education and the Division of Publications and Promotion. Special acknowledgment is made to Dr. S. J. Crumrine, general executive of the Association for his counsel and active participation in the field work. Valuable aid has been rendered by various members of the staffs of the American Social Hygiene Association, the National Tuberculosis Association, the National Health Council, the Maternity Center Association, the National Health Council Library, the National Organization for Public Health Nursing and the American Public Health Association.

In a special degree the Research Division wishes to acknowledge its appreciation to the four surveyors:

Murray P. Horwood, Ph.D.

Harold H. Mitchell, M.D., C.P.H.

B. Franklin Royer, M.D., D.Sc.

Edward Stuart, B.S.

who, in addition to one of the authors, W. Frank Walker, Dr. P. H., were chiefly responsible for the survey in the 86 cities. These men labored indefatigably and with intelligence to make the survey as complete and accurate as possible. They were ably assisted by Theodore B. Shank, B.S., Mrs. B. Franklin Royer, R.N., and Miss Elnora Thomson, R.N.

It is a pleasure to record the indebtedness of the Division to Major Henry Beeuwkes, M.D., whose advice and assistance in the early stages of the survey were most helpful.

The efficient secretarial services of Mrs. Alma Wheatley Fraas have done much to smooth the difficulties inherent in the preparation of the manuscript.

SUMMARY AND RECOMMENDATIONS

The smaller city of the United States is beginning to recognize healthy children as a community asset. Evidence of this attitude is found in the many health promoting activities already under way. There are, however, important things still left undone. The small city provides its children with good water to drink but feeds them milk of doubtful quality. It surrounds them with regulations designed to curb communicable disease, but at the same time withholds much of the real protection that it is possible to provide. Its human bookkeeping records are faulty and it fails to teach adequately either the child or his parents how to be healthy. It does not equip the official health departments with people who are trained for the work and who are paid enough to give their entire time to the position, nor does it appropriate funds that are adequate for the serious duty of promoting the public health. The bright spot is that most communities realize their shortcomings, and some have already progressed very far in their health advancement efforts.

The cities covered in this study are those whose population in 1920 ranged from 40,000 to 70,000. These cities are scattered over 31 states and represent all sections of the country.

The information was gathered almost in its entirety by five experienced men of the staff of the Research Division of the American Child Health Association who spent approximately a week in each of the cities specifically assigned to them.

The survey was begun in January 1924, after several months' preparation of a question schedule. To insure uniformity in methods of gathering information, the surveyors worked together before starting out by themselves. The field work was concluded in June of the same year. A year's time has been spent in the analysis of the information and in the preparation of the report.

The survey touched upon the health work of both public and private agencies. The report treats the entire subject under the following headings: The Characteristics of the Cities, the Organization and Personnel of the Health Department, Vital Statistics, Communicable Disease Control, Venereal Disease Control, Tuberculosis Control,

Maternity Hygiene, the Hygiene of the Infant, the Pre-school and the School Child, Sanitation, Laboratory Facilities, Popular Health Instruction, Public Health Nursing, Recreation, and the Private Agency in the Field of Public Health.

The more important observations in regard to these activities are given in brief form below, together with certain recommendations.

DEPARTMENT OF HEALTH

Summary

There is a health officer in each of the 86 cities, but in only 45 cities is he employed on a full-time basis.

Sixty-four of the health officers have a medical degree; only 2 have a public health degree.

The average salary of the full-time health officers is \$3,404; of the part-time health officers, \$2,459.

There is no board of health whatsoever in 16 cities; 18 cities authorize the city commissioners or the city council to act as a board of health.

There are 19 departments of health which have no public health nurses.

Dentists are employed on a full- or part-time basis in 16 cities; dental hygienists in 3 cities.

Sanitary inspectors varied in number from 2 in 26 cities, 3 in 41 cities, 6, 7 or 8 in 13 cities to 9 or more in 4 cities.

Full-time employees varied from 1 in 1 city to 20 and over in 5.

Part-time employees varied from 0 in 9 cities to 20 or over in 2.

Recommendations

1. The official health work of every city should be under the direction of a person with special education and training in public health administration and in educational methods of health promotion.

2. It is desirable that there should be a legally appointed board of health, or an advisory committee, or both, whose duty it shall be to give sympathetic consideration to the program of the health department, and counsel the health officer on matters of policy.

3. The way to ultimate economy in health expenditures lies in employing trained personnel on a full-time basis.

4. For the best interest of the public health, business associations, social clubs, welfare associations and public agencies should bend

every effort to cultivate mutual acquaintance, respect, confidence and support.

VITAL STATISTICS

Summary

The registration of births and deaths is largely done by the health department, though in nearly a fourth of the cities this work still rests with the city clerk.

The reporting of births is by no means as complete as it ought to be.

The utilization of these vital records in revealing the state and trend of health in a community is not common practice.

Recommendations

1. Cities should give as much attention to their human bookkeeping as business concerns do to their records of profits and losses.

2. Every city should know day by day and year by year :

The total number of live births.

The total number of still-births.

The total number of deaths.

The number of deaths :

Under 1 month

Under 1 year

Under 5 years

And for 5 years age groups to 30 years.

The number of deaths from the principal causes.

The population at the last Federal Census and something of the rate of growth since that time.

COMMUNICABLE DISEASE CONTROL

Summary

There is the widest difference of opinion as to methods of controlling epidemic diseases.

Twenty-eight different procedures are in use for the release from quarantine of a diphtheria patient.

Twenty-five different release procedures exist with respect to scarlet fever.

Gaseous fumigation of a room following the termination of a case of diphtheria or scarlet fever is still practiced in a third of the cities.

In 49 cities with compulsory vaccination, a question test of several hundred fifth grade school children in each city indicated that 87 per cent were vaccinated.

In the 37 cities where vaccination is not compulsory, the test showed but 56 per cent protected against smallpox.

The prevention of diphtheria by the use of toxin-antitoxin has been undertaken in an organized manner in 40 cities. One city immunized 4,900 in 1923 and 1924.

Facilities for the hospitalization of cases of communicable disease are available in most cities; 18 cities, however, are without such facilities locally.

Recommendations

1. Every city should apply the measures which are at hand for the prevention of diphtheria and smallpox. To this end each city should annually obtain vaccination against smallpox and establish the immunity of diphtheria by Schick test or toxin-antitoxin inoculation of a number of people equivalent to 90 per cent of the annual births.

2. Constant effort should be put forth to encourage and facilitate the reporting of communicable diseases.

3. In so far as is possible, every case of communicable disease reported should be visited by a nurse especially trained for that service to instruct the family in the conduct of the quarantine or isolation, and to give nursing care if necessary.

4. Every city should provide laboratory and expert medical service for the assistance of physicians in diagnosing cases of communicable disease.

5. Cities should provide locally or by convenient arrangement with county or adjacent city for the hospitalization of such cases of communicable disease as cannot be cared for with safety in the home.

VENEREAL DISEASE

Summary

Clinics for the diagnosis and treatment of venereal diseases were present in 65 cities.

Although these diseases are required to be reported to the health

department in 65 cities, the reporting is still too incomplete to be used as a satisfactory index of prevalence of venereal infection.

In these cities the campaign against venereal disease is largely limited to clinic work.

Recommendations

1. The program for control of venereal diseases should include educational, recreational, law enforcement, medical and social protective measures.

2. There should be available in every city a treatment clinic where treatment may be had at cost or free so that no case need continue untreated.

3. An official agency in each city should be charged with the responsibility of following up cases reported to insure the continuance of treatment either at private or public expense until a cure is effected.

TUBERCULOSIS

Summary

Seventy-one cities report special clinics for tuberculosis.

Forty-three per cent of the clinics are supported by private organizations.

An average of 300 patients were found to be registered with each city clinic.

The reporting of tuberculosis is inexcusably lax. Seventeen cities reported more deaths than cases in 1923.

Field nursing service for tuberculosis was already established in 76 cities.

Facilities for the care of the child contact and the incipient case are not as numerous as the need justifies. The social and economic advantage of treating cases early in childhood or in the early stages of the disease is still frequently disregarded.

Recommendations

1. There should be in every city a definitely formulated program for the prevention of tuberculosis. Such a program requires the active cooperation and support of the physicians, private agencies, the department of health and the citizens. Its aim should be to educate the public to appreciate the importance of a healthy, normal way

of living, of bringing up children with healthful habits, of living in the open, of playing in the sunshine, and of giving the handicapped child and adult an opportunity to catch up with his fellow beings.

2. Every reported case of tuberculosis should be the recipient of nursing service, rendered in cooperation with the physician if it is a private patient, or under the direction of the clinic physician if a clinic patient.

3. There should be a consultation clinic to examine, diagnose, and advise persons believed to be affected with tuberculosis. Such a clinic should render regular services to such as cannot be cared for by private physicians.

4. The following special facilities should be available to every city: *

- a. Classes for substandard children with special rooms, modified work program, rest and extra food.
- b. Summer camps for underweight children and contact of cases.
- c. Hospital facilities for incipient cases, child or adult.
- d. Hospital facilities for advanced cases.
- e. Provision for the assistance of the post-sanatorium case who still must lead a protected life but who can under such conditions be self-supporting.

MATERNITY HYGIENE

Summary

Approximately 10 mothers die annually from causes due to childbirth in the average city of 50,000.

Forty-one of every 1,000 births in these cities are still-births.

Forty-five cities, however, have taken steps to combat this hazard of maternity; 40 by establishing pre-natal clinics under the guidance of physicians and 5 through mothers conferences with nursing supervision.

Seventeen per cent of the births in these cities are delivered by midwives.

Fourteen per cent of the expectant mothers are under organized supervision either of a clinic or a field nursing service.

Nearly a third of the babies in 65 cities are born in hospitals.

* (Note: a, b, c should be provided locally; d may be at a state or county sanatorium.)

Recommendations

1. Every city should carry on a program to educate mothers to appreciate the importance to themselves, and to their child, of medical supervision from the early months of pregnancy.

2. Clinical facilities under the direction of a skilled obstetrician should be available for those mothers who ordinarily would not employ a physician during pregnancy.

3. A nursing service should be maintained in every city to provide guidance during the pre-natal period, competent service at delivery and careful supervision and bedside care for mother and baby during the post-partum period. This service should be given for a reasonable charge or free where necessary.

4. Hospital beds should be available in every city for those maternity cases which, for pathological or economic reasons or for convenience, should be hospitalized.

INFANT WELFARE

Summary

The infant is the best looked after of any age group.

Infant welfare clinics were found in 80 cities.

Seventy cities have both medical direction of clinics and nursing service.

Less than 30 per cent of the infants are registered with an infant welfare service.

Recommendations

1. That every new-born infant be visited within two weeks of birth by a public health nurse.

2. That, following this introductory visit, from 30 per cent to 50 per cent of the infants be enrolled in the infant welfare service.

3. That there should be in every community at least one medically directed clinic where concerted effort is made by the physicians and nurses in the education of mothers in child care.

PRE-SCHOOL

Summary

The child from 2 to 6 years of age is the most neglected of any age group.

Twenty-five cities provide neither clinic nor nursing attention.

Recommendations

1. Special effort should be made to awaken in every community an appreciation of the importance of these years for the physical and mental health and social behavior of the child in his youth and in his maturity.

2. Opportunity should be taken during these years of maximum susceptibility to immunize the child against diphtheria.

3. Every child should enter school in the best possible health. Physical and mental defects should be discovered and corrected or be under treatment.

4. Clinics for the pre-school child, with nursing follow-up, are as essential as the infant welfare clinics. These clinics should deal with such problems as faulty habits, anti-social attitudes and speech defects, as well as physical defects.

SCHOOL-CHILD

Summary

Eighty-four cities have established nursing service in their schools. Sixty-nine cities also provide medical service. Some form of physical examination or inspection is almost universal.

This examination is usually very superficial; in 35 cities less than two minutes is devoted to a child.

There is no uniformity or standardization in the examination procedure or in the method of securing correction of physical defects.

The records of the findings of the examinations and the results obtained in the nursing follow-up are seriously incomplete.

The present practice of inspection of school children by the teacher for the detection of early symptoms of disease is inefficient.

The common drinking cup has almost entirely disappeared from school buildings. It was found in only 13 out of 900 schools.

Sixty-five cities have begun to give the teaching of health an important place in their school curricula.

Recommendations

1. Every community should provide at least once in the course of the school career a thorough and complete physical examination of every school child. This examination should be educational in its character, interpreted to parent and teacher, and carefully followed up by nurses and teachers to secure maximum results.

2. The school medical service should recognize the importance of standardizing the physical examination procedure so as to make possible the comparison of findings and results.

3. Health training and instruction should be developed in a manner to interest the pupils and to maintain a balance between sound basic instruction and the stimulation of proper habit formation.

4. School buildings should be built and maintained with due regard for the hygiene of the school child. Items demanding particular attention are:

- a. Adequate lavatory and toilet facilities.
- b. Sufficient play space within easy access of the building.
- c. Provisions for proper natural and artificial lighting of all rooms.
- d. Provisions for the maintenance of cool temperature and adequate ventilation in the classrooms.

SANITATION

Summary

Speaking generally, the small city pays more attention to matters of sanitation—water supply, milk supply, control of other food, control of nuisances and sewerage—than to other health activities.

Eighty-two cities were found to have an adequate and safe water supply and the other four cities were building works for the protection of their supplies.

Twenty cities pasteurize over 90 per cent of the milk supply. Forty-seven cities are pasteurizing at least half of their milk supply, but only 8 cities thus protect their entire supply.

Eighteen cities reported epidemics of communicable disease in the last five years traceable to the milk supply.

Sanitary inspection still holds a prominent place among the activities of the health departments, although the educational possibilities of this service are still quite undeveloped.

Inspection of articles of food other than milk is common, though there is little uniformity in the methods employed and no effort to evaluate the work performed.

Recommendations

1. The milk supply of a city should be obtained from healthy cows kept in clean surroundings.

2. The milk should be handled by healthy people using clean utensils.

3. These requirements should be enforced by intelligent inspection of dairies and distributing plants.

4. Protection against the spread of milk-borne infection should be had by the proper pasteurization of the entire supply.

5. The health officer should be empowered to condemn and destroy foods considered to be unfit for human consumption.

6. The inspection of nuisances, such as noise, unsightly litter, rubbish, ashes, untidy yards, cellars, vacant lots, and dumps, which have little, if any, effect upon public health, should be delegated to the proper city departments,—fire, police or street cleaning.

7. The sanitary inspection service should become one of the most effective educational forces in the department instead of being merely a routine of unimaginative legal enforcement.

LABORATORY

Summary

Only 59 cities have provided what might be considered as a reasonably complete laboratory service, though 81 have some service provided by the local or the state board of health.

Recommendation

1. Every community should have available a bacteriological and chemical laboratory rendering diagnostic and analytical services covering the entire field of public health.

POPULAR HEALTH INSTRUCTION

Summary

The average citizen knows very little about the health work being done in his own city.

The layman's conception of the present day job of the health department is that of nuisance inspection and garbage collection.

The newest and most poorly developed activity of the modern health department is education, or popular health instruction.

Only 34 cities issue an annual report and many of these are of little value because of being submerged in the pages of a voluminous year book.

Such bulletins or reports as are issued are frequently composed of statistics without attempt at interpretation.

Recommendations

1. A health department should utilize the educational value attached to its every act and service in order to establish an individual and community consciousness in regard to health matters.

2. Continuous effort should be put forth to acquaint the public of all classes with the present day responsibilities and services of the health department as well as with the new developments occurring from time to time.

PUBLIC HEALTH NURSING

Summary

Every city has recognized the importance of the public health nurse; although the number employed varies from 1 to 20, the average number is 9, and the upper third of cities employ an average of 13.5 nurses.

There are, on an average, 3 organizations in each city which employ nurses, although there are cities with 5 and 6 such organizations.

One-third of the 258 organizations that employ nurses employ only 1 nurse, 19 per cent employ 2, and 17 per cent employ 3 nurses.

The department of health employs 31 per cent of the nurses, the department of education 22 per cent, and other organizations, chiefly private, employ the balance.

Forty different combinations of organizations that employ nurses were found in these cities.

Recommendations

1. There are less than half as many public health nurses in these cities as the needs of an adequate public health program indicate are required.

2. Nursing work would be more economical and better supervised if there were fewer independent organizations employing 1 or 2 nurses, and more organizations employing larger numbers.

RECREATION

Summary

All but 4 cities have public playgrounds in addition to the school playgrounds.

These varied from 1 to 19 in number, the average number being 6.

Public parks or squares were found in all but 1 city. The average number was 8.

Tourist camps are maintained in half of the cities, and receive sanitary supervision in most cases.

Swimming pools or bathing beaches were reported in 73 cities.

Young people's clubs are almost universal.

Recommendations

1. That every city should employ a man or a woman who should give full time to thinking, planning and working for the best possible use of the leisure hours of men, women and children.

THE PRIVATE AGENCY IN THE FIELD OF PUBLIC HEALTH

Summary

The private agency plays a very important part in the health work of these cities, 16 per cent of the work being carried on exclusively by the private agency, and 25 per cent of the total work being contributed to substantially by the private agency.

Over one-third of the cities report that private agencies were carrying on exclusively the work for tuberculosis, infant hygiene, the pre-school child and for pre-natal hygiene, while, in conjunction with official agencies, these services were conducted in over half of the cities.

The number of private organizations interested in health varied in the cities from 3 or 4 to 25 or 35.

One-half of the organizations employing nurses were private organizations.

Boys' and girls' clubs and denominational associations were found in from 80 to 90 per cent of the cities and definite health programs and camps were reported in 3 out of 5 organizations.

Adult interest in health is generally awakened and is accomplishing practical, though limited, results in most of the cities.

Conclusions

1. Private agencies are as necessary as official agencies in the field of health and the relation between them should be one of cordial cooperation.

A PROPOSED PLAN OF ORGANIZATION OF COMMUNITY HEALTH FOR A CITY
OF 50,000 POPULATION*Summary*

The plan is drawn to meet the needs of a city of 50,000.

It embodies the views of many people in various fields of public health:—local and state health officers and representatives of national health organizations.

It expresses the ideas of the surveyors following their studies of all the cities of this size.

In brief, the plan recommends a board of health of five members, and a full-time health officer with a background of special training and experience in public health work. There is also suggested an advisory committee of interested public spirited citizens, independent of the municipal administration, whose primary function is the sympathetic consideration of problems of the health department as they relate to the community at large.

The work of the health department is discussed under six headings, including, I. Administration and Records, II. Inspection, III. Laboratory, IV. Communicable Disease Control, V. Child Hygiene, VI. Nursing.

The per capita cost of this plan with generalized nursing service amounts to \$1.59. An alternative plan with specialized nursing service amounts to \$1.79 per capita.

As this plan relates to all health work in the community, the cost is no greater than that found in a number of cities in the survey. Under existing practice, however, it is the custom to find health work scattered among several agencies. It is their combined expenditure and not that of the health department alone that should be compared to the budget called for in the plan.

Recommendations

1. Cities should continuously analyse their health work and compare their results with accepted standards.

2. Consideration ought to be given the plan of organization and those features applicable to the local situation incorporated in the local program.

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Section I

The Conduct of the Investigation

HEALTH SURVEY OF 86 CITIES

THE 86 CITIES SURVEYED IN 1924
BY THE AMERICAN CHILD HEALTH ASSOCIATION

Alabama	Mobile	Michigan	Jackson
	Montgomery		Kalamazoo
Arkansas	Little Rock		Lansing
California	Berkeley		Saginaw
	Fresno	Missouri	Springfield
	Pasadena	Montana	Butte
	Sacramento	Nebraska	Lincoln
	San José	New Jersey	Atlantic City
	Stockton		East Orange
Colorado	Pueblo		Hoboken
Connecticut	New Britain		Passaic
Florida	Tampa		Perth Amboy
Georgia	Augusta		West Hoboken
	Macon	New York	Binghamton
Illinois	Cicero		Elmira
	Decatur		Mt. Vernon
	East St. Louis		Niagara Falls
	Rockford	North Carolina	Charlotte
	Springfield		Winston-Salem
Indiana	Gary	Ohio	Lakewood
	Muncie		Lima
	Terre Haute		Springfield
Iowa	Cedar Rapids	Pennsylvania	Altoona
	Davenport		Bethlehem
Kansas	Topeka		Chester
Kentucky	Covington		Johnstown
	Lexington		Lancaster
Louisiana	Shreveport		McKeesport
Maine	Portland		New Castle
Massachusetts	Brockton		York
	Chelsea	Rhode Island	Pawtucket
	Everett		Woonsocket
	Fitchburg	South Carolina	Charleston
	Haverhill	Tennessee	Chattanooga
	Holyoke	Texas	Beaumont
	Malden		Galveston
	Newton		Wichita Falls
	Pittsfield	Virginia	Portsmouth
	Quincy		Roanoke
	Salem	West Virginia	Huntington
Michigan	Bay City		Wheeling
	Hamtramck	Wisconsin	Kenosha
	Highland Park		Racine

It thus was clearly indicated that the thorough study of health work in the 86 cities with populations between 40,000 and 70,000 should be the special problem of this Association. This would prevent duplication, and at the same time extend our knowledge regarding the cities of smaller size about whose child health work we were particularly uninformed. Cities of this size possessed certain other special attractions. Frequently they were in the course of rapid development and on the eve of becoming large cities, with increasing health problems; or they were county seats exerting the natural leadership, and serving as an example to the surrounding country more effectively than the large city can do; or they were satellite cities springing up with incredible rapidity on the outskirts of some large city, and thereby facing special problems. Indeed, by reason of their smaller size, these cities were considered to afford a rich field for the study of existing activities affecting child health and the needs of future development.

The 86 cities found to be included by the United States Census figures for 1920 in the population group 40,000 to 70,000 were scattered through 31 states, and comprised a total population of some 5,000,000 individuals in 1923.

The names of the cities classified by states are given on page 4. The distribution of cities by size according to the population as of July 1, 1923, is illustrated in Chart 1.

PREPARATION OF INFORMATION GATHERING SCHEDULE

The preparation of a schedule for the gathering of the desired information proved a task of considerable magnitude calling for a clear understanding of the purposes of the survey and the use of the information secured, an appreciation of the limitations of the questionnaire method, a familiarity with the different branches of organized health practice and a discriminating sense of the important and unimportant in health work. It was recognized at the outset that the information gathered must embrace all the health promoting activities, official and unofficial, of the entire community before an intelligent grasp of the child health work could be secured. Various considerations determined that the survey should not consume more than a week's time in each city and this limitation in time necessitated the most careful planning in advance, to insure the collection of information of the greatest relative value. Such restrictions limited the sur-

HEALTH SURVEY OF 86 CITIES

veyor to personal consultations with health officials and others but of course did not permit extended observation of activities in detail. In short, the surveyor could under this plan obtain an idea of the quantity

Frequency Distribution
of 86 Cities
by Estimated Population July 1, 1923
(U. S. Census.)

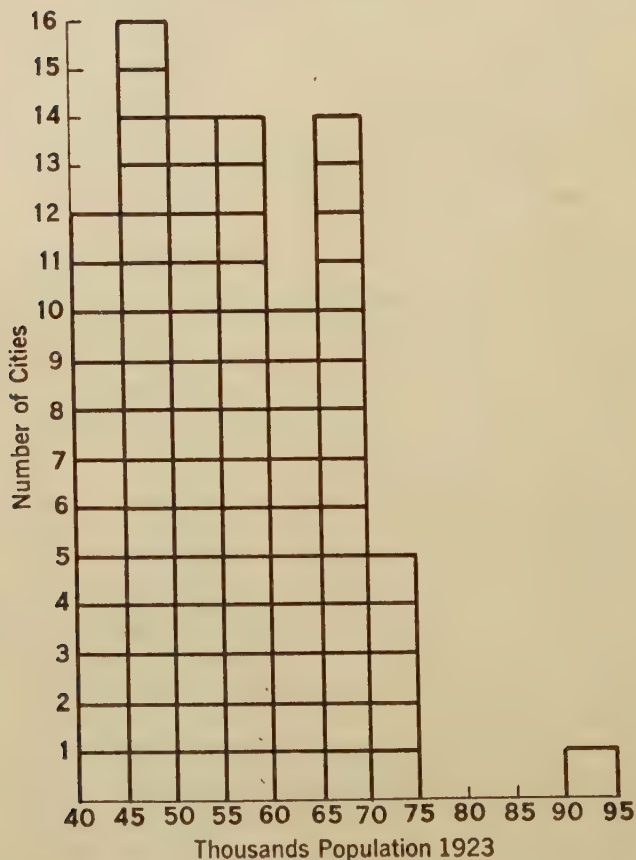


CHART 1

of health work done, could gather impressions of the work and the people with whom he came in contact, but he could not examine in detail into the effectiveness of the work performed in a way that

more deliberate observation of individual workers and phases of the health program would have permitted.

As a schedule for the gathering of information, the form previously used by the Committee on Municipal Health Department Practice of the American Public Health Association served as a starting point. Conferences were held with members of this committee and with representatives of the United States Public Health Service and the United States Children's Bureau for the purpose of perfecting the question schedule, and there were also discussed means for mutual cooperation in the prosecution of the survey. The schedule in its preliminary state was then modified, after discussion with representatives of the several national health agencies interested in tuberculosis, venereal disease, mental hygiene and nursing. It was shortly subjected to a practical trial in three cities of marked diversity, with subsequent changes as suggested by this trial. At this point it was minutely compared with the draft of the schedule under preparation by the United States Public Health Service for the survey of cities over 70,000 population and still further revised. Finally, three of the surveyors chosen to carry on the survey considered in conference every item of the schedule and made many clarifications in the phraseology of the questions and prepared many definitions and instructions for using the schedule. So far as possible the questions were specific, calling for a "yes" or "no" answer. Quantitative replies were sought rather than generalities. Special care was taken to prevent the too frequent intrusion of personal opinions, likes and dislikes. Provision was also made for uniform interpretation of questions which might prove troublesome during the course of the survey. A staff representative at headquarters was detailed to take charge of the administrative aspects of the survey. In spite of these precautions the experience of the surveyors, extending over 5 months in 86 cities, revealed many minor imperfections in the schedule.

CONTENT OF THE SCHEDULE

The schedule as actually used contained some 1,000 items (omitting the repetitions inherent in tabular matter), arranged under 84 separate topics, these in turn being classified under 6 major divisions. These divisions were I, City Government; II, Public Health Practices, with subdivisions on Administration, Communicable Disease Control, Maternity, Infant, Pre-school and School Hygiene, Food Control and other municipal activities; III, Education, embracing General Educa-

tion of the Public, Health Education of Mothers and of Children, and Professional Training of Teachers; IV, Relief and Rehabilitation; V, Recreation, and VI, Public Utilities, including Water Supply, Sewage Disposal, Garbage Collection and other special sanitary problems handled by the community.

SCHOOL CHILD HEALTH HABIT QUESTIONNAIRE

In addition to the above schedule, dealing with health activities, a questionnaire was prepared for the purpose of ascertaining certain health habits of school children. This consisted of fifteen questions of the most direct and objective character, referring to what the child did that day or the preceding day, in regard to sleep, diet, play, cleanliness, and so forth. Sheets containing these questions were printed so that each child had only to check the yes or no answers or write a few words or numerals. Provision for signing these sheets was purposely omitted. The time required to give the test to a school-room class was about 10 minutes. In order to secure a representative sample of the grade school children throughout the 86 cities, the test was given to one fifth grade class in every school the surveyors visited. The number of schools visited in each city averaged about 10 and the entire number of children tested was approximately 35,000. Both the selection and phraseology of the questions were designed to obtain the maximum assurance of reliability of the answers, and confidence in their accuracy was further increased by several check tests that were given as well as by the conviction of the principals, teachers and surveyors.

SELECTION OF PERSONNEL

It was essential to the success of the survey that it should be conducted by men of judgment, energy, ability and wide experience in the field of public health. The information obtained in each city would have been most comparable if the entire survey were made by a single individual. This was not possible in the time available. In order to complete the field work by the middle of June before the summer recess of the schools, there were needed five surveyors, each man being assigned from 15 to 19 cities. The Research Division considered itself most fortunate in securing for this task five individuals of exceptional training and experience. Their professional work in public health administration or public health teaching has covered 21, 12, 12, 7 and 6 years respectively; one is a professor of public

health who is an author of a book on Public Health Surveys, two are sanitary engineers of broad administrative experience, two are doctors of medicine with special training and experience in public health and child health work. Four are Fellows of the American Public Health Association.

STANDARDIZATION OF FIELD WORK

Great pains were taken to insure a uniform interpretation of the schedule by the surveyors. Each surveyor, after all possible explanations before beginning, was accompanied on his first survey by the senior surveyor, who was chiefly responsible for the preparation of the schedule. The meaning of the questions and the type of answers expected were thoroughly discussed. This was done to avoid misinterpretation and consequent lack of comparability in the answers. In addition to this precaution each report on receipt at the main office was subjected to critical inspection, and omissions or non-specific entries were taken up directly with the surveyors by correspondence. The value of this uniform supervision of each surveyor was unmistakable.

ROUTING OF SURVEYORS

The distribution of the cities throughout the country necessitated careful planning of the itineraries of the surveyors, in order to avoid traversing the same territory twice and to permit of the minimum loss of time in travel. The country was divided into five sections, each containing approximately the same number of cities to be surveyed and a section allotted to each surveyor. There was a New England section, including 15 cities in Massachusetts, Maine, Rhode Island and Connecticut; a middle Atlantic section, including 18 cities in New York, New Jersey and Pennsylvania; a southern Atlantic section, including 12 cities in Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida and Alabama; an Eastern Central section, including 23 cities in Ohio, Kentucky, Tennessee, Michigan, Indiana, Illinois and Wisconsin; and a group of remaining states covering 18 cities in Arkansas, Louisiana, Texas, California, Montana, Colorado, Nebraska, Kansas, Iowa and Missouri.

The only modification of this plan was the assignment of four cities to two other surveyors, one the Director of Public Health Relations and the other the Associate Director of Research, both of the American Child Health Association, both Fellows of the American

Public Health Association and equipped by training and experience for the task. Assistance was rendered to certain of the surveyors by several other people of experience.

NARRATIVE SUMMARY

While the completed schedule represented an accumulation of all the pertinent facts regarding community health activities, it was essentially a statistical document, devoid of summarized statements and sparing in interpretative comments. In addition to the schedule, however, the surveyors prepared a condensed narrative which dealt with the geographical, political and economic characteristics of the city, the outstanding facts relating to the health work of the city, suggestions made in the course of the survey, and recommendations for immediate and eventual improvements. This personal and confidential account of the city by the surveyor has been of particular value as an interpretative statement.

GETTING THE FACTS

It had been anticipated by some that the surveyors would occasionally find themselves embarrassed by the attitude of local officials, who might consider the survey in the nature of an intrusion, uninvited and uncalled for. It is a pleasure to record that the local and state officials, public and private, were most cordial and cooperative. An explanatory letter to the local and state health officers announced the purpose of the survey and the dates of the visits of the surveyors. Letters of introduction to the secretaries of Chambers of Commerce and other important citizens were also carried. The first official act of the surveyor was to call upon the mayor, the health officer, and the superintendent of schools. Each surveyor was provided with an article prepared for the press announcing the purpose of the visit. The assistance given by the local officials was sympathetic and generous to a marked degree, and upon the surveyor's departure a statement was given to the press with the approval of the health officer, expressing appreciation for the courteous treatment received and commenting, as a rule, on the outstanding local activities, giving praise where praise was due and pointing briefly toward the unquestionable needs of the future. No attempt was made to make a full report of the findings since an intelligent interpretation depended upon the analysis of the completed survey of the 86 cities.

Most important to the surveyor was the strict limitation of time

permitted to be spent in a city. In the majority of instances the information called for in the schedule was collected in about 5 days. But in order to complete the schedule and assemble the surveyors on June 19, it was found necessary to provide the equivalent of 4 weeks of additional assistance to 2 surveyors. Generally speaking the time devoted by the surveyors to the different city agencies was:

	Per Cent
Department of Health	30
Department of Education—principally the visits to the schools	30
Other City Departments	20
Private Agencies	20

One of the consequences of the time limitation was the necessity of accepting unverified statements in reply to the questions asked, owing of course to the impossibility of conducting personal field investigations or statistical studies. It also meant that the survey was more quantitative than qualitative in character for facts may be obtained by questioning but quality of service can only be judged by minute observation of the service in operation, and this was impracticable.

The surveyors were in continual despair over the condition in which the records were frequently found. Their schedules are heavily marked with the symbol, N. R.—meaning, no record. There are many exceptions, of course, but on the whole the record-keeping of public health activities is in a primitive condition. And yet record-keeping is no less important to the health agency than bookkeeping is to the manufacturer. Not only were all degrees of absence of record-keeping found, but when records of an activity were found they frequently were not assembled in a useful manner. Or even though assembled, they frequently were not analyzed or were incompletely or ineffectually analyzed. The result of this is that the reader of this report will be struck by the number of cities not reporting on many items. These cities have had to be listed among the cities for which information was unobtainable or lacking, and have had to be excluded from the tables of those reporting for the item in question. Only those items definitely marked N. R. were considered as being unobtainable; where no indication was made and the space for the answer left blank, the surveyor was considered responsible for the lack of information.

The surveyors made earnest and laborious efforts to salvage information of value from the existing records. This often meant consulting every birth report during the current year, or every death under 1 year of age, or the individual case records in a clinic, or the individual pasteurization records, although this was never done where it was possible to get it done by any other means. It was not so unusual to find that even the health officer did not know the infant mortality rate for his city.

A final effort to secure the more important of the missing information desired was made by correspondence from the headquarters office during the tabulation and analysis of the data, but the result was only moderately successful.

HOW THE INFORMATION WAS ANALYZED

Upon the receipt of the survey material in the office, the schedule was carefully reviewed and checked for omissions, and interpretative notes were added after comparison of the records with the supplementary summary. The information was then tabulated on large sheets with columns for each question. This displayed the information in convenient form and also served as a useful check on the completeness of the replies. Missing information was indicated in three ways, the term "No Record," meaning that the city did not keep such a record; "Unavailable," meaning that certain work was done but that no summary statement was available, and "Lacking," meaning that the surveyor had been unable to secure the information due to limitation of time or inability to see the particular person in charge. In this latter case the information may have been available within the city but was not forwarded to the office by the surveyor.

The tabulation revealed certain inconsistencies in the replies. There were instances of replies on the same subject, called for in different sections of the schedule, differing materially. This was due in all probability to differing viewpoints among different individuals supplying the information. There were instances of confusion between the number of people enrolled at a clinic and the number of visits to the clinic. There were instances which indicated that a question had been misunderstood. These inconsistencies were traced back as far as possible even to the surveyors still in the field and to people in the cities. In some cases the matter was clarified; in others no better interpretation was possible. It has been the practice to leave such instances out of consideration in summarizing the material.

Before any compilation was made of the tabular matter, it was reviewed by each surveyor upon his return to the office. Further corrections were thus possible which could not have been secured satisfactorily through correspondence.

The next step was to condense the material in summary tables. For instance, 20 cities were found to have 1 nurse in a special field of work, 10 cities with 2 nurses, 4 cities with 3 nurses, and so on. Where clinic attendance was given, these figures were averaged and the maximum and minimum noted. The frequency distribution of such figures was often made.

THE COMPARISON OF CITIES

The general principle was adopted of arranging records of work, such as the number of vaccinations, the number of nursing visits, the number of food inspections, in an order of magnitude, and then averaging the figures for the third of cities having the highest accomplishment; similarly averaging the figures in the third of cities with the next highest accomplishment and likewise with the lowest third of cities. In addition to the average figure, the maximum and minimum figure in each third was given as well as the grand average for the entire group. It is believed that this arrangement gives a better picture than the single average for the group, in that it reveals variations more clearly.

In addition to computing how many cities do certain things and how many do not, what the average performance is in a certain field as well as the maximum and minimum, there is a most natural curiosity to know how one city compares with another. Comparisons may prove most instructive but to be significant they must have a sound basis. It is a simple matter to compare the area of one city with that of another. Area is mathematically measurable. There is a well recognized unit of area which can be applied. Similarly it is easily possible to compare populations because a count can be made. Comparisons which show the completeness of health programs are the type to be expected in a survey of this kind.

Which is the best city? The publishing of the fact that one city is better than another is not to be done lightly. Such a statement reflects on local pride. It affects many people. The city favorably mentioned may become so self-satisfied as to check its endeavors and be content to rest on its laurels. Such a statement might even seriously impede further progress and hamper local efforts at betterment.

As to the city unfavorably mentioned, all sorts of emotions may be aroused. From some quarters there may come the feeling of resentment, of hurt, of wounded pride. In the effort to place responsibility, assuming now that the criticism strikes home, some well meaning people, working under great handicap, may be unjustly singled out for blame. This is the dark side of the picture, the part that should make one think seriously before placing a city in the limelight of unfavorable publicity.

There is another side. There are certain good features that may come forth from a comparative statement. The well ranked city may derive great satisfaction in having its position thus heralded. In fact, this may stimulate a redoubling of efforts in order to retain the ranking or even to better it. There is great rivalry among cities as well as among men. A good repute is worth cultivating. The city which is well down on the ladder may be aroused from its lethargy. A statement of the city's relative position may give much needed strength to the few who are fighting against great odds for better things. Those responsible for the poor showing may be stirred as a matter of self-protection or self-aggrandizement into a progressive mood. All these things are possible.

The point to be observed is this: If a comparison of cities with respect to their health work is to be made, then, it is most essential that the basis of the comparison be reasonable and just.

Does such a basis of comparison exist? There are the personal impressions of the surveyors as to their own group of cities. There is the judgment of those who have analyzed the findings. There are, however, more than a thousand items in the schedule of each city. It is not difficult to pick out the cities at the extremes, those who are doing a great deal and those doing little. Complications are introduced by the city which does some things adequately and others inadequately. How can one line of work be weighed against another? It would be much easier if some scale were constructed which could be applied to each city. It is likely that this would be more trustworthy than general judgment. Such a scale has been prepared. It rests upon the judgment not alone of the surveyors or the analysts of this study, but upon the combined judgment of many in the various fields of health work. This scale has been given the name of "The Appraisal Form for City Health Work." *

* Published by American Public Health Association, 370 Seventh Avenue, New York City.

THE DEVELOPMENT OF A CITY HEALTH YARDSTICK

Inasmuch as this Form is believed to be of great significance for the health movement, a somewhat detailed description of its development is given in these pages. This is quite necessary in that use has been made of it in the analysis of this survey.

The desirability of some concrete standard of organized health work against which the work of communities could be compared has been appreciated for some time and several attempts have been made to construct a form that would serve as a health yardstick. More than 10 years ago Dr. Charles V. Chapin, Health Officer of Providence, proposed a measure as the outcome of his study of state health departments. Later Mr. Franz Schneider of the Russell Sage Foundation prepared a table of relative values in health work. Dr. F. W. Sears of the New York State Department of Health developed a score card for rating city health work. These various standards embodied for the most part the personal opinions of individuals and of course there were many who held different opinions. To produce a document of some permanence there was needed something more than the judgment of an individual, even though that individual might be eminently fitted to express seasoned judgment.

In 1920 the American Public Health Association through its Committee on Municipal Health Department Practice, began an intensive study of the work of city health departments. At the request of that committee, Dr. Chapin had submitted a statement of standards and relative values in April, 1923. The committee had given much thought to these proposed standards and after amending the statement to harmonize with its collective judgment, approved it for experimental use by the Field Director, Dr. W. S. Rankin. Through contact with many city health officers, the Field Director incorporated many constructive suggestions in the rating schedule as it appeared when it passed the Committee.

In 1924, toward the termination of its field work on the present survey, the Research Division of the American Child Health Association realized the definite need of some standard of health work to assist in the expression of the results of the survey. In its existing form the standard of the above-mentioned committee was not yet a finished, usable product, nor was it suitable in that its application was limited to the work of a health department and not to the entire health work of a community, public and private. The Research Division, with the assistance of other divisions of the association, therefore pro-

ceeded to construct a new standard, embodying about half of the features of the previous standard, but supplementing it with appropriate additions.

With the likelihood of two standards being in the field, which could only lead to misunderstanding, the representatives of the two associations came together in conference and harmonized their views, and consolidated their judgment into a single expression of standards and values. This statement of standards and values was then changed to meet the interests of four other large national unofficial health agencies, to wit, the American Social Hygiene Association, the National Organization for Public Health Nursing, the National Tuberculosis Association and the National Health Council.

At this juncture, it was agreed between the national organizations, occupying their advisory relation to the field, that for any statement of standards and values in health work to be of practical use, it would be necessary that such statement should express the viewpoint and have the whole-hearted acceptance of the city health officers themselves. Early in 1924, the field representatives of the American Child Health Association and the American Public Health Association had discussed the possibility of setting up standards of health practice with 3 separate groups of city health officers. The choice of the 3 groups with which contact was made was determined through the opportunity afforded by the meeting with the New England Health Institute, in Boston, in May, 1924, of a number of health officers of New England cities; and through the convenience of making contact with large cities closely located geographically in the states of Ohio and Michigan. The 3 groups, a New England group, an Ohio group, and a Michigan group, organized to consider principles of standards and values, consisted of from 10 to 12 health officers each. The 3 groups spent one or two days in carefully considering the standards and values that were submitted by the advisory voluntary agencies. The chairman of each of the groups selected 2 others, that is, 9 in all, to meet in conference with the voluntary agencies interested in the evaluating principle applied to health practices. Before this conference of city health officers was held, the voluntary unofficial agencies agreed to leave every decision with reference to alterations in the tentative statement of standards and values which had been drawn up, to the city health officers. The voting on all questions rested exclusively with the city officials, the representatives of the voluntary agencies maintaining their advisory relation and foregoing the privi-

lege of voting. As a result of that conference, participated in by 8 city health officers (representing a total of 34 in all) and representatives of 6 voluntary agencies, and lasting nearly 4 days, the statement of standards and values in the Appraisal Form was adopted.

The Appraisal Form recognizes 8 major headings in city health work. A definite value is assigned to these headings, the total equaling 1,000 points. Headings are further subdivided with values assigned to each sub-item. Major headings and values are as follows:

Vital Statistics		60
Communicable Disease Control		175
Venereal Disease Control		50
Tuberculosis Control		100
Health of the Child		350
Pre-natal	75	
Infant	75	
Pre-school	50	
School	150	
Sanitation		175
Sanitary Inspection	20	
Food and Milk Control	75	
Water	40	
Sewerage	40	
Laboratory		70
Popular Health Instruction		20
Total		<hr/> 1,000

There is also additional credit allowed in certain instances for special activities.

There exists then in this Appraisal Form an expression of the group judgment of a substantial body of experienced people as to standards and relative values for city health work. In its present form it is a first edition statement of standards which it is expected will be revised and improved under the test of experience. Such an understanding was expressed at the meeting referred to above. Following the adoption of the Appraisal Form it was agreed: First, that the group representatives would call together their respective groups and ask their acceptance of the rating schedule as adopted by the conference, and without alteration, for 1 year, at the end of which time each group would meet separately and make such changes in

the schedule as the experience of its members suggested, and select a committee of 3 to meet with similar committees from the other groups and consolidate their separate group judgment into a single rating sheet; Second, that there would be no appraisal of the health work of cities on this principle except where such appraisal had been requested by the city health officer, and that in no event should there be any publication of the appraisal of the health work of the city except upon the express wish of the health officer; Third, that the field representatives of the voluntary agencies should undertake as rapidly as their time and resources permitted the organization of other geographically convenient groups of city health officers to participate in the further development of public health standards.

THE APPLICATION OF THE APPRAISAL FORM TO THIS SURVEY

With deference to the wishes of the health officers who adopted the Appraisal Form, it is not possible to publish the actual score of the cities in this survey. All of the cities, however, have been appraised on this basis and the distribution of cities by the total score and by the scores for the separate lines of health work have been expressed without naming the city. Certain modifications in the details of the rating were made to accord with the information at hand. This was necessary as the survey was completed before the Appraisal Form was adopted. It therefore calls for certain items in a form different from that gathered in this survey. These changes are not material but they should be noted. As an example of the changes made, the number of individual patients who visited the tuberculosis clinic was substituted for the number of clinic visits. The average monthly bacterial count of raw and pasteurized milk for 6 selected months in the year was substituted for the average count for the entire 12 months. Altogether there were substitutions made in 13 items out of the 83 items called for in the Appraisal Form. Illustrations of the findings of the survey expressed in terms of the rating schedule will be found in the pages following. Before coming to this subject it is necessary to add a further word as to the use made of the Appraisal Form in expressing the results of this survey.

In each of the chapters in Section II dealing with the various public health practices found in these cities as a group, the average scores have been expressed for the third of cities having the highest scores in a particular line of health work, the third having the next highest, and the third having the lowest scores. The average score

for all cities and the maximum and minimum score for each group are given without the mention of names of cities. These tables are believed to be of value as indicating the departure of conditions as found from the standards prescribed in the Appraisal Form.

In the individual sketches of each city in Section III there are given tables showing whether a city stands among the upper third, middle third or lower third of cities in each of 11 major health activities. The classification is based upon the Appraisal Form. This rough division is made to convey to each city its approximate position in health activity in comparison with other cities. Of course it must be realized that with 86 cities divided into three groups, of 29, 29 and 28, a city may be classed in the upper third if in 29th position and in the middle third if in 30th position. The value of these tables lies in the fact that they indicate the general position of the city in the health field. The city which is consistently among the lower group in many of the different major health activities is assuredly not carrying out a health program as adequately as the city which is consistently found with the upper third of cities. This generalization as to ranking with other cities is presented in lieu of the specific score of each city.

There is this to be said about the Appraisal Form. It is not a finished product. It is not an infallible test of goodness and badness. It is not a measure of efficiency in health work. It is primarily an index of health activity. The majority of its items are quantitative rather than qualitative. It measures the amount of health work performed and the presence or absence of certain established health practices. The items are selected as concrete, objective indices of health work. These are chosen in order to get away from that standard which is so fluctuating, so variable, namely, individual opinion. The items have not been selected hastily. They represent the collective opinion of many people of broad experience and sound judgment. We live by standards. Drugs and biological products are of standard potency and otherwise would be dangerous to use. We have educational standards and ethical standards. We have standards of weight and of length. The standard is a necessary guide in everyday life. Much of the weakness and confusion in health work has been due to the lack of standards.

The Appraisal Form thus marks a beginning in the standardization of health work. In its present form it does not take account of personalities. It is hoped that in the light of experience it will be

gradually brought nearer and nearer to a thoroughly sound and acceptable measure of health work. Such is the aim but it does not claim to have attained this aim in its present form.

There are weaknesses and obvious deficiencies in this Appraisal Form. For example, one item in the section on Venereal Disease Control calls for the reporting of 500 cases of the disease for each 100,000 population. Unless a city has cases reported in this ratio it is not given the full credit of 12 points. It is possible for a higher type of residential city to have actually much less than this number of cases to be reported. Yet such a city is penalized for not having the number of cases called for in the standard. This is obviously unfair. But this fact together with certain other less glaring deficiencies are not such as to discredit the Form in its entirety. This defect will be corrected in the process of revision.

In its present state, the Appraisal Form, in spite of its deficiencies, marks a long step ahead. It is the most useful and dependable document of its kind. It is an aid to the health officer as experience has already proved. A few examples of its use are given below:

A brief for annual appropriations—In several cities the rating schedule has been used to show in a comparative, objective manner certain deficiencies in the department of health, and the expenditures which would be required to secure a full credit in place of these deficiencies. When presented in this manner to the appropriating body of the city, as a part of the health officer's budgetary request, the health department was, in one instance, the only department of the city government to receive an increase (amounting to 14 per cent) for the coming year. In another instance in the face of a strong movement for retrenchment throughout the city government, the health budget, presented in the light of the rating schedule, was the only departmental budget to remain uncut.

A basis for a health program—The value of the rating schedule as an outline of a well-balanced health program has appealed to several health officers to such an extent that their future programs are definitely based upon achieving the standards set in the schedule. One health officer, unwilling to wait a year to compare his progress as compared with the preceding year, requested his division chiefs to score their activities on a monthly basis in order to stimulate the divisions to attain a full score more readily.

A basis for an annual report—It has occurred to the health officer of East Orange, N. J., to incorporate in the annual report of his

health department the detailed rating of his city, for the 83 items included in the schedule, and to publish the score attained, with full discussion of many of the items. Another health officer has largely improved the character of his annual report in the light of the Appraisal Form.

A means of interesting a Mayor or Chamber of Commerce—In a city which had recently scored itself the health officer was studying the rating when the mayor of the city happened to enter the office of the health department. Upon being shown the low rating of the city in diphtheria prevention the mayor inquired what could be done to improve the situation. When the health officer explained that he could secure a full score (30 points) if he had \$175 with which to buy toxin-antitoxin, the mayor promised to make the sum available from special funds. Other health officers have taken the rating of their city to the mayor or the chamber of commerce and by comparing the local rating with other cities have awakened a new interest in the city's health record.

For coordinating the interests of the departments of health and education and of private agencies—A striking outgrowth of the use of the rating schedule in one city where the findings were reported in a special meeting was the development of a new sense of the interdependence of all health agencies on each other and the formation of a joint health committee on which all agencies were represented under the leadership of the health officer. In another instance the rating schedule brought to the health officer for the first time the realization that he should cooperate with the department of education in its health work if his city was to secure the fullest return from its health activities. School medical inspection was promptly started.

A stimulus to self-analysis and inquiry—Cities where the spirit of self-complacency was imbedded in the health department have been aroused to a new interest in their opportunities for improvement. The field agents of the American Child Health Association have found the rating schedule an unfailing stimulus which carried them further and more quickly into the heart of the public health situation in a city than any other means used heretofore. No less enthusiastic has been its reception by several State Departments of Health which have used it not only as a central point around which to organize state associations of health officers but also as a basis for rating all cities of sufficient size in the state.

There is one other reason for using the Appraisal Form in expressing the results of this survey for, as an objective means of discrimination between the different examples of city health work, it is in substantial accord with the personal judgment of those who have studied the city on the ground.

COMPARISON OF CITY RATINGS BY APPRAISAL FORM AND PERSONAL JUDGMENTS OF SURVEYORS

Before the surveyors returned to the office at the conclusion of the survey they were instructed to arrange their respective cities in order ranging from the best down to the poorest. This might be termed an "impressionistic rating." These rankings were filed away. Later when the Appraisal Form was constructed and all the cities had been scored on this new objective basis the "impressionistic" rankings were brought forth and the two rankings compared. The results were surprisingly similar. The cities which the 5 surveyors placed first were in 3 out of 5 cases ranked first in the Appraisal Form score. The cities which the 5 surveyors placed last were in 4 out of 5 in-

Ranking of Cities by Surveyors	Rankings of Cities by Appraisal Form				
	Surveyor I Western	Surveyor II New England	Surveyor III Middle Atlan.	Surveyor IV Southern	Surveyor V E. N. Central
1	7	4	1	1	1
2	4	1	3	2	4
3	9	5	2	5	12
4	3	3	8	6	5
5	5	9	5	7	3
6	2	6	10	11	11
7	1	10	7	10	2
8	6	14	15	8	6
9	10	2	4	3	8
10	11	7	14	9	15
11	16	8	12	15	13
12	15	13	9	13	14
13	8	11	13	4	7
14	13	12	6	12	16
15	12	15	11	14	10
16	18		16		9
17	17				17
18	14				
19	19				

stances placed last by the other index. Where differences in respective positions existed there were, with few exceptions, but slight divergencies. Illustration of the two types of rankings is given on page 22.

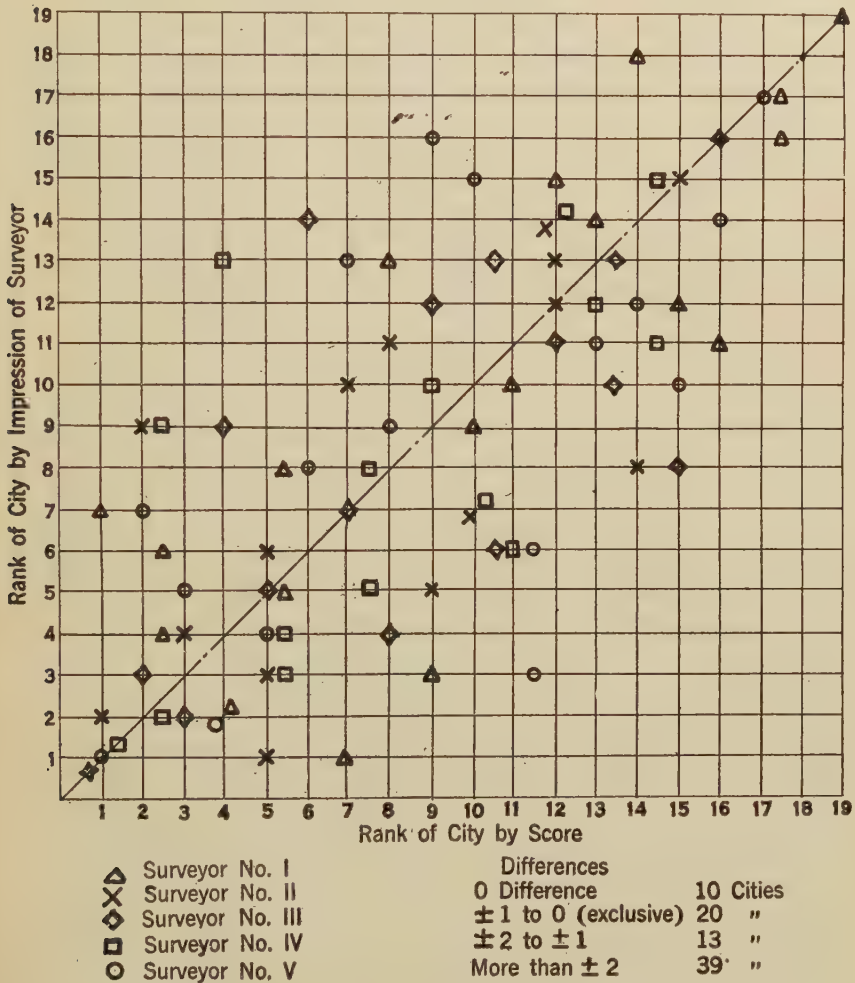


CHART 2

It should be noted that the ranking of the cities by the Appraisal Form score results in the establishment of an order of rank regardless of whether the difference between positions is 1 point or 50 points in the 1,000 points. As a matter of fact, the difference

between positions is less than 10 points in 25 instances. If this fact is taken into consideration the correspondence between the ranking by the surveyors and the ranking by the Appraisal Form is even closer.

As a further test of the degree of agreement between the 2 methods of ranking the correlation of the relative positions of the cities by the 2 methods was computed mathematically. The results as indicated below show a high degree of correlation.

Surveyor	Correlation	Probable Error
I	.8181	$\pm .0506$
II	.7377	$\pm .0790$
III	.6950	$\pm .0861$
IV	.6764	$\pm .0932$
V	.6640	$\pm .0904$

The agreement of the 2 methods has been expressed in Chart 2. Perfect agreement would be indicated by the clustering of all characters on the diagonal line.

The primary cause of such disagreement as did occur in the 2 methods of ranking was the factor of personality of the health workers in the cities. This could not well be incorporated into an objective rating. Furthermore, the surveyors made their rankings in June at the conclusion of the survey but before they had opportunity to go over their surveys side by side and study the comparative findings with more care. To illustrate the point, Surveyor III ranked one city in 8th place whereas the Appraisal Form gave it 15th position. In this instance the surveyor was favorably impressed by various health workers whom he met while in the city. Many of their records of work were, however, not available at that time. On the surface the work seemed relatively well carried out but later when the missing records were forwarded to the office they did not substantiate the statements made on the ground. In other words, the performance did not measure up to appearances.

In another instance with the same surveyor, a city which he had ranked 14th was accredited 6th position by the Appraisal Form. Here the surveyor had not been impressed by what he saw, but when the records were in, they indicated that the city was actually doing a considerable volume of work.

It is quite evident, however, that if there had been opportunity for the surveyors to rank their cities again after having been over

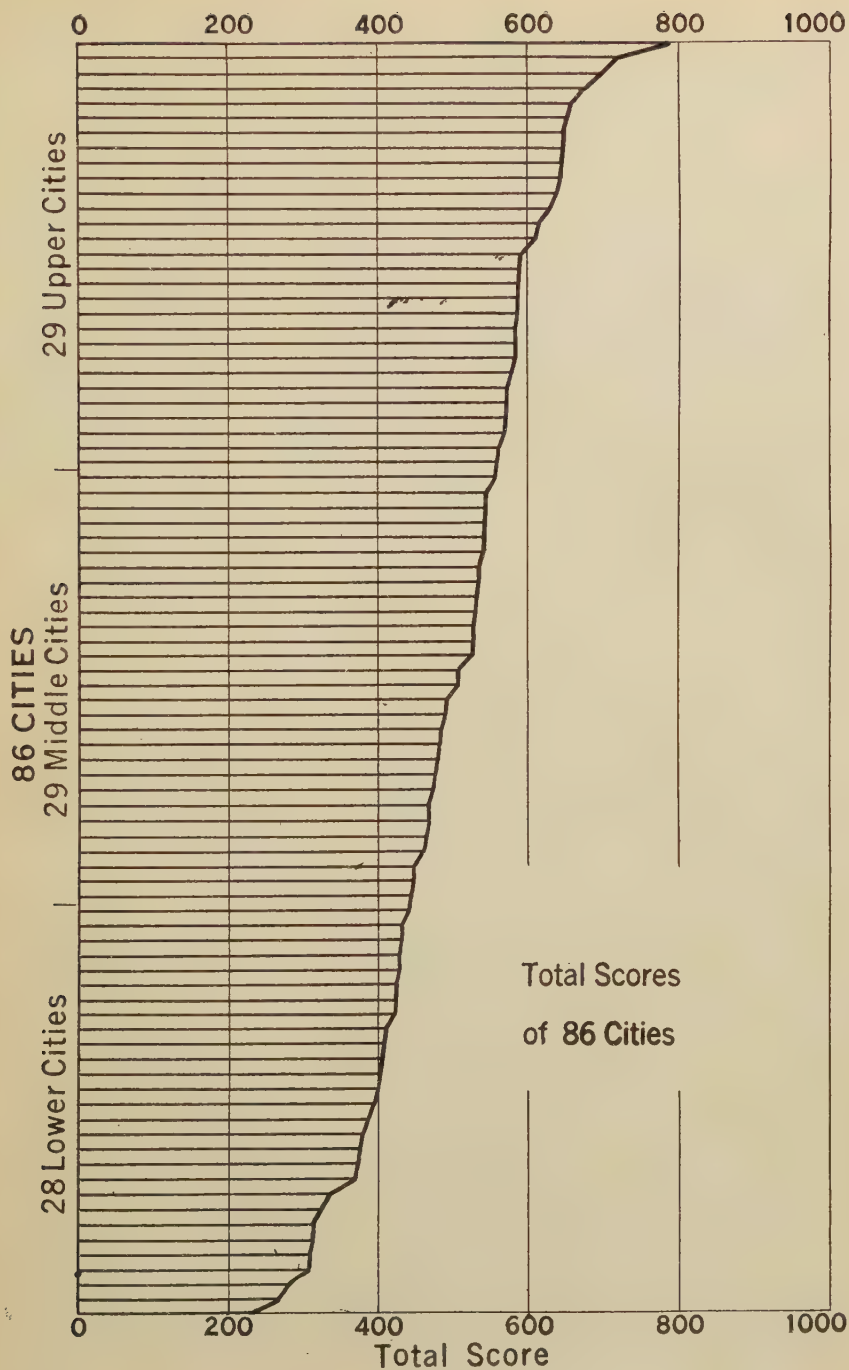


CHART 3

the records, the divergence between the two methods of ranking would have been less than indicated in the tables.

THE FINDINGS

What are these 86 smaller cities doing to protect the health of their children?

Which are the best cities?

What more needs to be done?

The findings and recommendations in condensed form have been given in the early pages of the Report under the title "Summary and Recommendations." We shall not attempt to repeat what has there been said but merely to supplement this with certain information which may be expressed graphically.

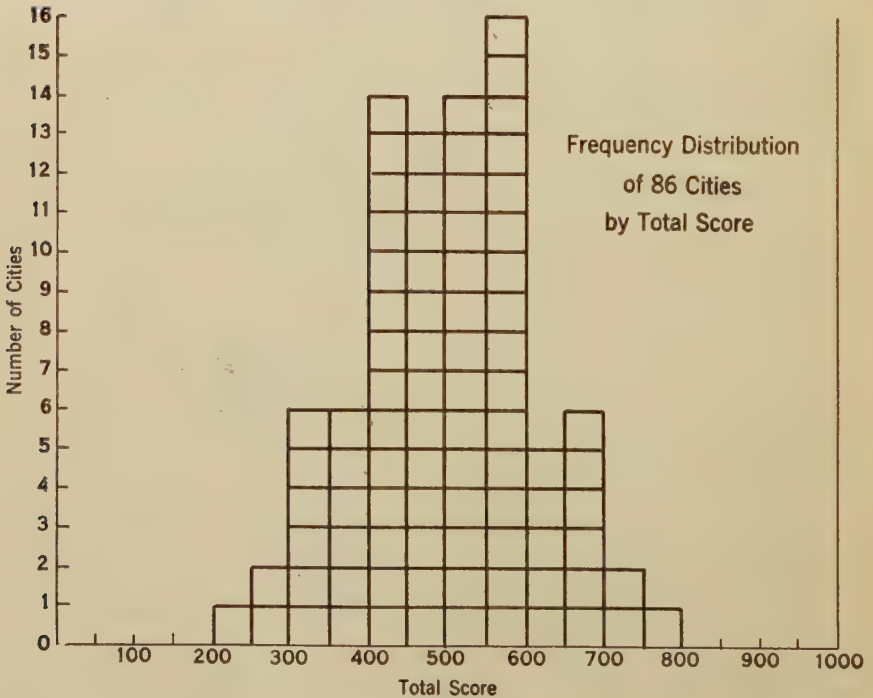


CHART 4

THE PICTURE OF HEALTH WORK IN THE 86 CITIES

The simplest picture of health work in these cities may be painted in the language of the Appraisal Form which is fully described in the pages headed "How the Information Was Analyzed." The full credit allowed in a reasonable health program is 1,000 points. No city in this survey attains a full score. The highest rating is just short of 800. The lowest rating is just above 200. The average rating of all cities is about 500. Thus, the organized activity for the promotion of health in this entire group of cities averages about half of that called for in a reasonable program as defined in the Appraisal Form. The distribution of the individual ratings of the cities without mention of name is illustrated in Chart 3. The outline of the chart shows a rather even distribution either side of the 500 mark.

Another picture of the scores of the cities is given in Chart 4. This shows the number of cities having scores within a certain grouping. Thus there is 1 city with a score between 200 and 250, 2 cities with scores from 250 to 300 and so forth. The mode or most numerous group is from 550 to 600, there being 16 cities in this class. With slight irregularities this grouping is quite symmetrical about the 500 axis.

The total scores are the sums of the scores in each of 11 major health activities. The Appraisal Form, as will be recalled, assigns different weights to these activities; thus vital statistics represents but 60 points out of the 1,000, whereas the health of the school child accounts for 150 of the points. The standing of the 86 cities as a group in each of the 11 activities may be expressed as a percentage of the points allowed for that activity. As indicated in Chart 5 the activity which stands highest and comes nearest to the standard called for in the Appraisal Form, is sanitation. The percentage is 67. Laboratory stands second with 60 per cent. The activity that departs furthest from the standard is popular health instruction. Accepting the Appraisal Form as a reasonable, dependable document it would appear that popular health instruction, pre-school hygiene and pre-natal hygiene are the least developed of the health activities. It will be observed that the infant is far better looked after, the average degree of activity in this field for the entire group of cities equaling 58 per cent of the standard prescribed.

The average, while of use as the simplest index, conceals, of course, the variation in individual scores. In Chart 6 the average score

in each activity has been expressed for each of three groups of cities. The upper group includes the 29 cities with the highest total scores; the lower group the 28 cities with the lowest total scores; and the middle group the 29 remaining cities. These charts provide a useful basis for comparison for the individual city which prepares a similar picture of its own health work.

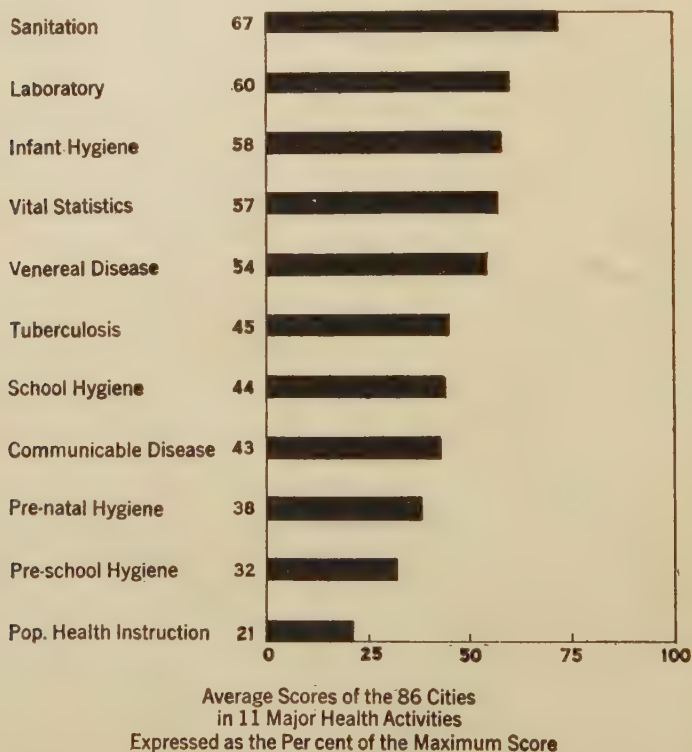


CHART 5

These same facts may be expressed in such a way as to give a better idea of the distribution of the scores of individual cities. This is done in Chart 7. Taking the first diagram for explanation, the bar at the top indicates that there are 4 cities which equal the standard in vital statistics. There is 1 city whose score is between 90 and 99 per cent of the standard, 16 cities whose score is from 80 to 89 per cent of the standard and so on. These diagrams present interesting configurations. A distinct mode with sharp de-

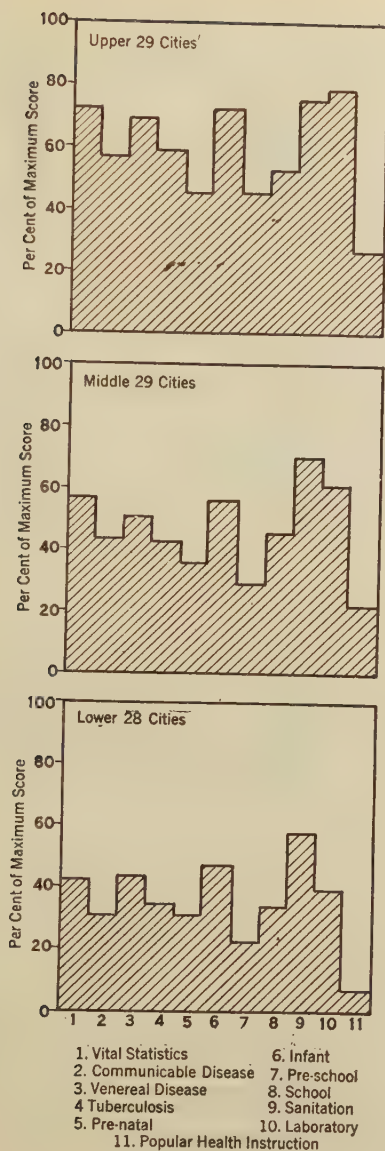


CHART 6

Average Attainment in 11 Major Health Activities for the
 Upper 29, Middle 29, and Lower 28 of the 86 Cities
 When Arranged in Order of Total Score

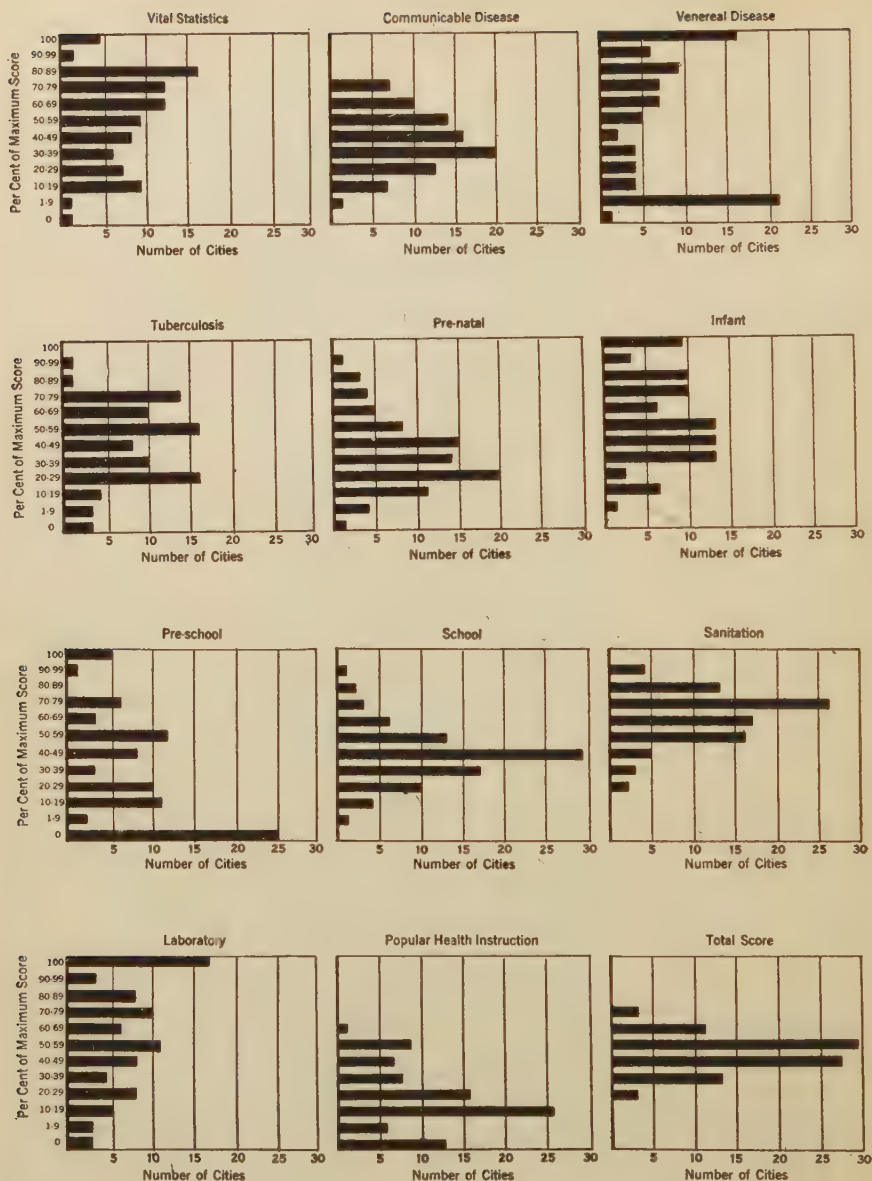


CHART 7

Distribution of Cities by Per cent of Maximum Score
for 11 Major Health Activities

scent from the mode is to be observed in communicable disease, pre-natal, school and sanitation. The mode for communicable disease is quite low, between 30 and 40 per cent. This, coupled with the fact that no city scores above 79 per cent, suggests the possibility that the standard established has been too severe. The pre-natal diagram accords with the general feeling as to the lack of development in this field. The school diagram with the sharp recession either side of the mode suggests that most cities are midway in school development with relatively few instances of either very complete or incomplete programs. The mode in sanitation is between 70 and 79 per cent and the general showing is in accord with general impressions. The average performance in vital statistics, venereal disease, tuberculosis, infant welfare work and laboratory is less significant as there is no well defined mode and there is wide variation in the scores of cities. The diagrams for pre-school work and popular health instruction indicate that relatively little is being done in these fields by most cities.

WHO IS RESPONSIBLE FOR THE HEALTH WORK IN THESE 86 CITIES?

The official health department, other official departments and private agencies divide responsibility. The proportional distribution of responsibility in the entire group of cities was determined after finding the type of agency conducting the work in 10 major health activities in each city.

Type of Agency	Per Cent
Department of Health alone	46
Department of Health and other organizations, official and private	11
Other official agencies alone	15
Other official agencies and private organizations	3
Private agencies alone	16
No agency	9

Thus the official health department either alone or assisted by other organizations is responsible for 57 per cent of the work. This may be better appreciated by reference to Chart 8, in which the solid black area represents the activity of the health departments in each of 10 major phases of public health. It is only in communicable disease control and sanitation that the health departments have

taken complete charge. Less than half of the cities carry on the remaining work through the departments of health, although other official agencies, such as the department of education, the city clerk,

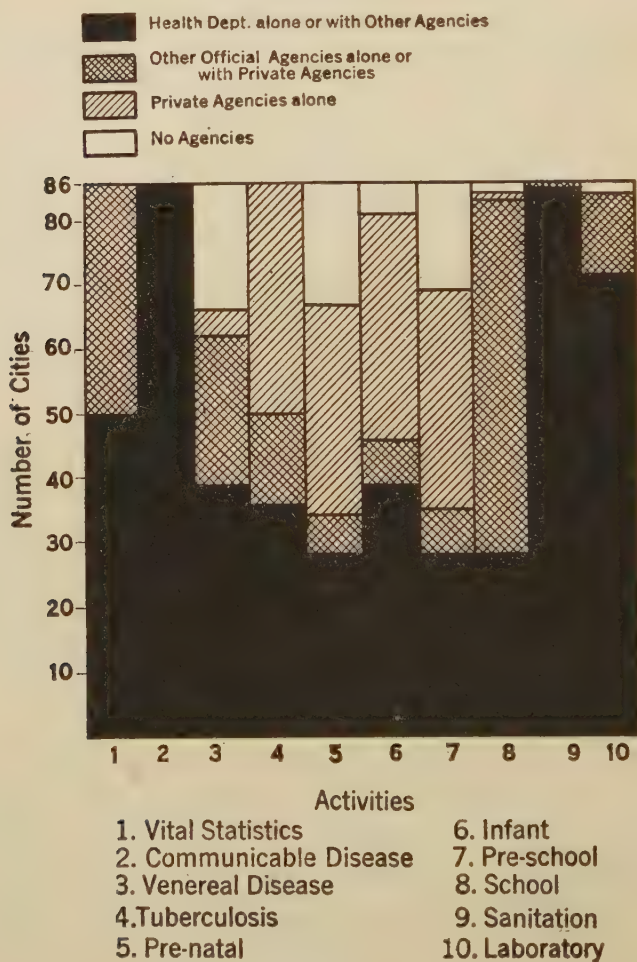


CHART 8

Type of Agency Conducting Health Work

municipal commissions and county and state organizations conduct work in 18 per cent of the cities. Details are given in the next table.

NUMBER OF CITIES IN WHICH DIFFERENT TYPES OF ORGANIZATIONS
DIRECT MAJOR HEALTH ACTIVITIES

Types of Activity	Total No. Of Cities	Dept. of Health		Oth. Official Private			No Activity
		Along	With Others	Agency Along	Agency With	Agency Pvt.	
Vital Statistics	86	49	1	36	..	..	..
Communicable Dis.	86	82	4	..	..	..	..
Venereal Diseases	86	29	10	20	3	4	20
Tuberculosis	86	15	21	10	4	29	7
Pre-natal	86	18	10	2	4	33	19
Infant	86	25	14	2	5	35	5
Pre-school	86	18	10	3	4	34	17
School	86	17	11	50	5	1	2
Sanitation	86	80	5	1	..	..	..
Laboratory	86	64	7	12	1	..	2
	860	397	93	136	26	136	72
Total			490		162	136*	72
Per Cent			57		18	16*	9

* When all activities which private agencies are sharing with other organizations are added to the 136 private organizations working exclusively in the various activities, the number is 218 and the percentage, 25.

It is in the field of maternity, infant and pre-school hygiene and tuberculosis control that the department of health is least active. Reference to Chart 42 on page 263, in the chapter on the "Private Agency in the Field of Public Health," shows the large proportion of this field which is preëempted, at present, by the private agency. In 38 per cent of the cities the work in these 4 activities is conducted exclusively by private agencies, while either alone or in conjunction with some other agency, this work is carried on in 57 per cent of the cities.

The absence of any organized activity in venereal disease control in 20 cities, pre-natal hygiene in 19 cities, pre-school hygiene in 17 cities, tuberculosis control in 7 cities, infant hygiene in 5 cities, school hygiene and laboratories in 2 cities, is sufficient proof that public health work in many of these cities is far from adequate.

HEALTH SURVEY OF 86 CITIES

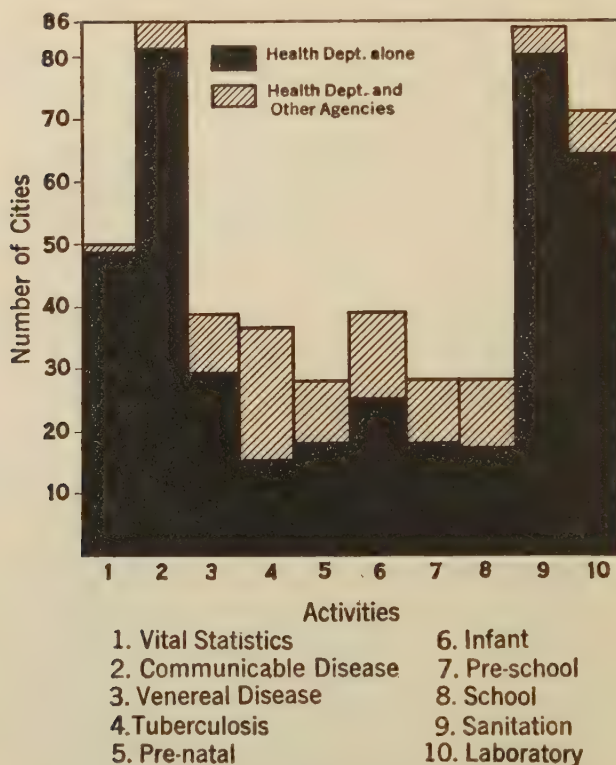


CHART 9

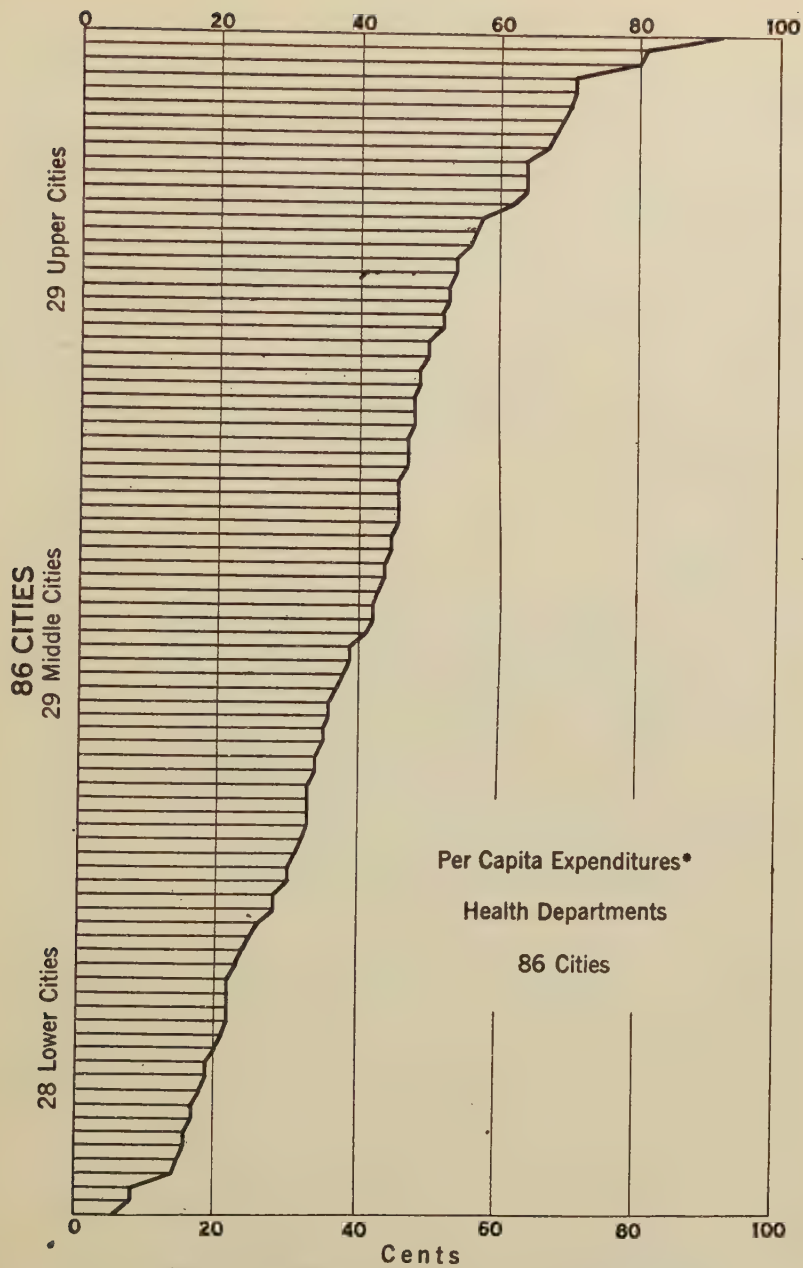
Health Work Conducted by Health Department

(Subdivision of black areas in Chart 8)

THE COST OF PUBLIC HEALTH WORK

No attempt was made to secure accurate cost data of the health work of all types carried on in each community. To have done so would have required an excessive amount of time. The thorough analysis of the data would have constituted a study in itself. Moreover, as comparisons of expenditures of cities are misleading and inaccurate without careful analysis, this has not been attempted.

Health Department Expenditures—But the question of department of health expenditures could not be overlooked. However, department of health expenditures are complicated by the inclusion in the budgets of items which are totally unrelated to health, the inclusion of which makes per capita comparisons with other cities unsound.



*Exclusive of communicable disease and tuberculosis hospitalization and garbage collection

CHART 10

In the case of garbage removal and a scavenger service the expenditures are easily deducted. Other deductions must be made arbitrarily. Such irrelevant expenditures as those for maintaining comfort stations, recreation programs and social relief work, which occasionally were found in department of health budgets, have been eliminated. Plumbing and vinegar inspectors, however, and in one instance, building and electrical inspectors, were not excluded, as it was not possible, consistently, to make the correct deductions for these services.

Hospitalization of Communicable Disease and Tuberculosis—The most important item of expenditure that may account for important differences in the per capita expenditures of the health department is that of hospitalization of acute communicable diseases and tuberculosis. Wide differences exist. In many cities there is apparently no expense incurred by the health department for such hospitalization. The cost is met either by a city or county department of public charity or by the individuals themselves, or by private charity. In 26 cities, however, this became an item of expense, separately recorded. At one extreme the expenditure was small, only 1, 3, 5, or 7 cents per capita. Ten cities spent less than 10 cents. At the other extreme are a number of cities in which the health department either operates one or more hospitals or pays large sums to local hospitals, or to county hospitals for the hospitalization of local patients. This is particularly the case with certain of the Massachusetts cities, 6 of which spent from 34 to 85 cents per capita. The average expended by the 26 cities reporting such expenditures was 19 cents.

Health Department Expenditures Exclusive of Hospitalization—When the expenditures for hospitalization by the department of health in the 26 cities are deducted from the department's total expenditures devoted ostensibly to public health work, it is found that the average per capita figure for the 86 cities is 42 cents. The upper third of cities expended 63 cents, the middle third 41 cents, and the lower third 21 cents, as shown in the following table:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	63	91	49
Middle Third	29	41	48	33
Lower Third	28	21	33	6
Entire Group	86	42	91	6

Health Department Expenditure Inclusive of Hospitalization—

When the cost of hospitalization of communicable disease and tuberculosis patients of the 26 cities is included in the total per capita expenditures, the average figures are increased to some extent. The average per capita expenditure of the upper 29 cities is raised from 63 to 74 cents, the middle group of cities is raised from 41 to 45 cents, and the lower group from 21 to 23 cents. The average for all 86 cities is increased from 42 to 48 cents.

Unit Costs—It was manifestly impracticable to attempt to arrive at the cost of various services of the department of health, in these smaller cities, where so often the financial statements are ambiguous or incomplete and several services are performed by the same employee with no definite recording of the distribution of his time.

SPECIAL MENTION OF CITIES

The question may well arise in the reader's mind: Which city, after all, is the best? The answer is not easily given. The comparative merits of the cities may be learned in a general way from the chapters in Section III. One cannot say that any single city is outstanding in all phases of its public health work. There are cities, however, that are particularly interesting because of the success of one or more of their health activities.

East Orange, for example, is noteworthy for the close and effective cooperation which has been brought about between its efficient and well-directed health department and the several highly organized voluntary organizations which serve not only East Orange but the other 4 Oranges.

Berkeley has taken advantage of its opportunity to affiliate its health department with the state university's, with interesting results. Berkeley's use of the 15 to 30 student nurses, in training in the nursing school, to conduct, under 7 supervisors, its public health nursing, gives it a unique advantage.

Winston-Salem, while neglectful of its pre-natal and pre-school problem, has developed a strong health department and its analysis of its health work on a cost basis would indicate that its services in 1923 represented saving in dollars of more than twice the expenditures of the entire department.

Newton leads the cities in respect to its health education work, its high standing being reflected by the remarkable showing in the health habit questionnaire test given to its fifth grade school children.

Binghamton's department of education has also done particularly well in its health teaching in the schools.

York has developed an unusually strong private nursing association which conducts all public health nursing in the city.

Stockton, with its unique County Unit Plan, has particular interest for the student of this form of public health development.

Brockton's public health laboratory is performing, under excellent direction, a particularly extensive service along all the lines that a laboratory could properly pursue.

There are other cities which might be singled out for mention. For further details, however, the reader is referred to Section II containing the chapters on administrative health practices as well as to the chapters on the individual cities in Section III.

GENERAL CONCLUSIONS

While specific recommendations regarding the more important public health services in the 86 cities will be found in the "Summary and Recommendations" on pages V to XVII, the general conclusions, arrived at after more than a year of study, are:

1. Each city is conscious of its responsibilities for child health and for the general public health, but this responsibility is now greatly divided between the department of health, other official agencies and the private agencies.

2. The well-trained, capable, full-time health officer is the most important single need revealed by this survey.

3. Wise leadership on the part of the health officer would do much to strengthen and consolidate those branches of public health which are now carried on by private and other official agencies, frequently in an independent and unrelated manner.

4. Cities are wasting money by not securing technically trained personnel for technical public health work.

5. The great diversity in effectiveness, in methods and in emphasis in public health work is the result of haphazard growth, which has been for the most part without guidance, objective goals, standardized methods or balanced programs.

6. Health workers need standards whereby they can distinguish between effective and ineffective work, practicable guides for conducting various health activities, and uniform methods of recording work, making reports and budgets.

7. The further education of the public on health is necessary if official and private health agencies are to receive the public support which is essential to their successful work.

8. Public health work could increase greatly in effectiveness without a large increase in cost if the scientific knowledge now at hand were utilized and if the existing health work was organized so as to prevent gaps and duplication and inefficiency.

WHAT THE STUDY COST

This entire study extending over a period of 2 years from the time the first plans were drawn to the issuance of the report has cost approximately \$55,000. This sum includes salaries and travelling expenses of the surveyors, the salaries of the office staff and the printing of the report. This expense may be subdivided as follows:

The Survey Itself	\$32,000
Preparation of the Report	19,000
Printing of Report	4,000

Expressed in relation to the combined population of all the cities in the survey, this represents an expenditure of about 1 cent per capita.

Section II

Administrative Practices in Public Health

CHAPTER I

THE CHARACTERISTICS OF THE CITIES

The individuality of each of the 86 cities is as distinctive as that of a human being, showing in one case all of the vigor and pioneer spirit of the frontiersman, and in another the reserve and conservatism of the city cloaked in traditions 200 or more years old. In another category is the industrial city, contrasting sharply with the center for the agricultural district a few miles distant. And there is the satellite city in the shadow of the more lustrous city upon which it is dependent for its very life. Some of the more tangible of these characteristics which lend themselves to numerical expression are here discussed.

FORM OF CITY GOVERNMENT

It is, of course, recognized that the efficiency of a health department will depend primarily on the ability, integrity and conscientiousness of the personnel employed, but it is doubtless also true that cities which are provided with intelligent and far-seeing governmental organizations appreciate the importance of satisfactory health supervision and administration to a greater degree than those which are less fortunate.

There has been a tendency, especially since the beginning of the twentieth century, to get away from those forms of municipal government which are essentially political and which are often not efficient in the administration of municipal affairs. This has been indicated by the fairly wide adoption, first of the commission form of government, and later of the city manager type. The latter is doubtless potentially more efficient than any other form yet devised, but its effectiveness depends primarily on the training, tact and efficiency of the city manager. Freedom from the handicap of political bias or prejudice, and from danger of early termination of office, makes it more possible for a city executive to administer the affairs of a city wisely and well. Such an individual would undoubtedly stimulate and foster the development of a well-run health department. An

analysis of the conditions that prevail in the cities-survey shows the prevalence of the various forms of government as follows:

Form of Government	No. of Cities
Mayor and Council	38
Mayor and Commission	29
City Manager	2
City Manager and Council	9
City Manager and Commission	7
Board of Trustees	1

It is of interest to note that 38 cities still retain the older form of government consisting of a mayor and council. This seems to be particularly true in the New England States which were included in this survey, as well as in Georgia and Indiana. In some of the other thickly populated states like Illinois, Michigan, New Jersey, New York, Ohio and Pennsylvania, the tendency is to break away from the old system and to adopt one of the more modern forms of government. This tendency is more distinctly apparent in the cities of the Far West and of the South, for in many of these the city manager form of government has been introduced during the past 10 years. Altogether a total of 18 cities had adopted the city manager form of government by the time this study was made. In 9 instances the city manager was assisted by a council, and in 7 by a commission. In only 2 instances, Pasadena and Wheeling, did the city manager appear to have complete control over the administration of municipal affairs. The states included in this survey in which more than one city is governed under the city manager plan are California with 5 cities, Michigan with 3 and Ohio and Virginia with 2 each. Other states represented which have one city under this plan are Maine, New York, Texas, West Virginia and Wisconsin.

The tendency to adopt the city manager form of government is indicated by the fact that during the 5 year period from 1918-1923, 9 of the 10 cities which adopted a new form of government, changed over to the city manager plan. It is also interesting to note that the city manager plan superseded the commission form of government in at least 4 of these 9 instances. In only 1 instance, in Altoona, was the city manager form of government replaced by another, the type adopted being the commission plan. The cities which during the past 5 years have adopted the city manager form of government are

Bay City, Lima, Beaumont, Pasadena, Stockton, Berkeley, Sacramento, Tampa and Portland, Maine. Two of the 86 cities, namely, Highland Park and Hamtramck, Michigan, were both incorporated as cities during the same period, the former in 1918 and the latter in 1922.

The mayor and commission form of government was observed in 29 of the 86 cities. In 1 instance, namely that of Cicero, Illinois, the city was governed by a board of trustees.

COMPOSITION OF POPULATION IN THE 86 CITIES

It is well known that the composition of the population of a community from the standpoint of nativity and age distribution and color plays an important part in determining its death rate. For this reason, and especially if comparisons of the healthfulness of these communities are to be made, it is desirable to study the composition of the population in each of the 86 cities. The specific information for each city is recorded in an appended table, in the back cover of this book.

It is of special interest to note that during the period between the 1910 and 1920 Federal Census enumerations 15 of the 86 cities showed a very marked increase in population. The cities in this list and their populations for 1910 and 1920, respectively, are:

City	Population 1910	Population 1920
Fresno	24,892	45,086
Cicero	14,557	44,995
Gary	16,082	55,378
Hamtramck	3,559	48,615
Highland Park	4,120	46,499
Winston-Salem	22,700	48,395
Lakewood	15,181	41,732
Bethlehem	32,180	50,358
Chester	38,537	58,030
Beaumont	20,640	40,422
Wichita Falls	8,200	40,079
Portsmouth	33,190	54,387
Huntington	31,161	50,177
Kenosha	21,371	40,472
Racine	38,002	58,593

It will be observed that those cities which showed the most rapid increase in population during this period were Hamtramck, Highland Park and Wichita Falls. The first 2 obtained their impetus primarily through the development of the automobile industry in Michigan, and the last because of a distinct oil boom which occurred during this period. Other cities which have grown with particular rapidity are Cicero and Gary, both of which responded to the very marked increase in the industrial activities that occurred in these localities during the period under consideration. It is surprising to note that not a single New England city is included in this list of cities of rapidly increasing populations, in spite of the great activity which took place in the highly industrial section of the country with the outbreak of the World War.

DISTRIBUTION BY COLOR

It has been recognized that the prevalence of a large negro population in any community makes for an increase in its mortality rate. For that reason it is of particular interest to examine the 86 cities in order to determine specifically those which have a large negro element. An analysis of this kind indicates that negroes make up from 9 per cent to 46 per cent of the population of 22 of the 86 cities in 1920. In 13 of the 86 cities more than 25 per cent of the population was composed of negroes and in 8 of the 86 cities more than 40 per cent of the population was composed of negroes. These cities are all located in the South, and this proportion must be constantly borne in mind when the vital statistics of these communities are being studied and analyzed. The cities in this group are Mobile, Montgomery, Augusta, Macon, Shreveport, Winston-Salem, Charleston and Portsmouth. Sixteen out of the 22 cities having a large proportion of negroes are located in the southern states, whereas only 6 are in the northern or more central states. The latter are Topeka, with 9 per cent of the population composed of negroes; Gary, with 10 per cent; East St. Louis, with 11 per cent; Springfield, Ohio, with 12 per cent, Chester with 12 per cent; and Atlantic City, with 22 per cent.

DISTRIBUTION OF FOREIGN-BORN

The composition of the population may be further studied with profit by ascertaining the percentage of foreign-born and negroes in each community. This information has also been made available by the census enumeration for 1920 for the 86 cities and will also be

found in the table of selected facts in the back cover of this book. Specific information on the composition of the population by nativity is of great importance in properly interpreting the mortality rates of communities. It is well known, for example, that the Irish and Scandinavian groups suffer very largely from tuberculosis and that infant mortality is low among Italians.

For classification purposes, it is arbitrarily assumed in this report that a community having at least 15 per cent of its population foreign-born, may be considered to have a large foreign-born group. Forty-seven of the 86 cities may be classified in this group. Of these 47 cities, 28 had at least 25 per cent of their population in the foreign-born group, and 14 of the cities observed showed that 30 per cent or more of the population was foreign-born. In this last group may be listed:

City	Per Cent Foreign Born	Predominating Group
New Britain	36	Poles and Swedes
Cicero	34	Poles and Lithuanians
Chelsea	40	Poles and Russians
Fitchburg	32	Irish and Italians
Holyoke	34	Irish and Poles
Hamtramck	47	Poles, Austrians and Germans
Hoboken	35	Italians and Germans
Passaic	41	Hungarians and Italians
Perth Amboy	36	Hungarians and Austrians
West Hoboken	35	Italians and Germans
Niagara Falls	35	Poles and Russians
Pawtucket	33	English and French Canadians
Woonsocket	37	French Canadians and Poles
Kenosha	31	Danes and Germans

It is especially noteworthy that all of the 15 New England cities included in this survey had at least 15 per cent of their respective populations in the foreign-born group, and that 12 of these 15 cities had at least 25 per cent of their populations in the foreign-born group, 9 of these being in Massachusetts. The coast cities have larger foreign-born groups than those which are more inland. This is, of course, what would be expected, and indicates the problems which the uneven distribution of the immigrant population in our country has brought about. In a few instances, especially in those states

where large industrial developments have occurred which have required large numbers of unskilled workers, the inland cities have shown large foreign-born groups. This is particularly true in the middle West, an outstanding example of which is Hamtramck. In 1920 Hamtramck had a larger proportion of its population foreign-born than any of the other 86 cities included in this survey. On the other hand, the cities in the South have hardly been affected by the many millions of immigrants that have poured into this country during the past 50 years.

An analysis of the appended table, in order to ascertain the predominating foreign-born groups in the 86 cities, shows that in 27 instances the predominating foreign group was Italian, in 26 German, in 21 Russian, in 19 Polish and Irish, in 11 English, in 9 Canadian, and in 5 Mexican and Swedish. The 5 cities where Mexicans represent one of the two principal foreign-born groups in the community are Pasadena, Stockton, Pueblo, Topeka, and Beaumont. In 4 instances the Hungarians represent one of the principal foreign-born groups, in 3 the Austrians, and in 2 the Greeks, the latter being found in Charlotte and Winston-Salem. Cubans, Danes and Syrians were found to be one of the predominating foreign-born groups in each of these cities.

AREA OF THE 86 CITIES

The area recorded for each city in square miles was obtained locally by the various surveyors for the year 1923. Sixteen cities had an area less than 5 square miles, 32 had an area between 5 and 9.9 square miles, 19 had an area between 10 and 14.9 square miles, 11 had an area between 15 and 19.9 square miles, and 8 had an area greater than 20 square miles.

Cities having an area of 5 square miles or less, with a population of approximately 50,000 will unquestionably show, in most instances, conditions of over-crowding. Inasmuch as over-crowding makes for increased opportunity of contact, and hence for the spread of disease, this condition is unfavorable both from the standpoint of public health as well as of decency and morality. Sufficient experience has already been accumulated with regard to zoning and city planning to enable municipalities to prevent the construction of tenement dwellings and the creation of other unfavorable housing conditions which prevail to such an unfortunate degree in most of our large cities. With the development of the automobile and the improvement in other methods

of rapid transit, more attention should be directed toward providing suitable and desirable housing conditions for all of our communities and especially for the smaller cities in this country.

Cities having an area less than 5.0 square miles are:

City	Area in Square Miles
Chelsea	2.3
Everett	3.0
Malden	4.8
Hamtramck	1.9
Highland Park	4.0
Hoboken	0.8
East Orange	4.0
Passaic	3.3
Perth Amboy	4.3
West Hoboken	0.9
Mt. Vernon	4.3
Altoona	4.1
Chester	4.7
Lancaster	4.0
McKeesport	1.3
York	3.5

PERSONS PER DWELLING

Dividing the cities into 3 groups using the number of persons per dwelling as a basis, we find that in 1920, 42 of the 86 cities had less than 5 persons per dwelling; 22 of the cities of those observed had between 5 and 6 persons per dwelling; and 22 cities had more than 6 persons per dwelling. It may be assumed that those cities having an average of 6 or more persons per dwelling will show some conditions of over-crowding. In this group are New Britain, Cicero, Gary, Portland, Brockton, Chelsea, Fitchburg, Holyoke, Salem, Hamtramck, Hoboken, East Orange, Passaic, Perth Amboy, West Hoboken, Binghamton, Mt. Vernon, Niagara Falls, Pawtucket, Woonsocket, Wichita Falls and Kenosha. Additional information concerning all of these cities confirms the conclusions which the figures on the number of persons per dwelling indicate. In only 2 instances is some doubt cast on the statistical information, namely, that of East Orange and Binghamton. Seven of the 16 cities which were

found to have an area less than 5 square miles are included in the list of cities having more than 6 persons per dwelling.

DEATH RATES AND BIRTH RATES

As a background to the description of the public health activities that follows in this report several tabulations summarizing the death rates and birth rates of the majority of the cities for 1921, are presented. The standardizations were calculated for the year 1921 from the data published by the United States Bureau of the Census before the data for the year 1922 were published. The distribution of 78 surveyed cities that are included in the Death Registration Area on the basis of the crude, corrected and standardized death rates is as follows:

Crude Rate	No. of Cities	Average Crude Rate	Average Cor- rected Rate	Average Stand- ardized Rate
5.0 — 9.9	15	8.1	8.9	8.9
10.0 — 14.9	51	12.5	12.1	12.8
15.0 — 19.9	10	16.5	14.4	16.5
20.0 — 25.3	2	21.7	20.5	24.3
Total	78	12.5	11.7	12.8

The crude rates range from 6.4 to 25.3, although the great majority fall between 10.0 and 14.9 deaths per 1,000 population. The general average is 12.5.

When these crude death rates are corrected for non-resident deaths and deaths of residents occurring elsewhere, the average rate is reduced from 12.5 to 11.7. Similar reductions are noticeable in all but the lowest of the rate groups.

Standardization of each city's crude rate was also made for age distribution using the Standard Million for England and Wales. The effect of this standardization was to raise the rate from 12.5 to 12.8.

The crude birth rates in the 63 surveyed cities that are included in the 1921 Birth Registration Area reveal surprising differences. The range is from 8.5 births per 1,000 population in East Orange to 32.6 in Johnstown. The general average for the 63 cities is 24.4. East Orange's low rate is due to the fact that 51.8 per cent of the births in East Orange families occurred in the various hospitals in 8 nearby towns, and are therefore registered in those towns. Correction for this fact would give East Orange a birth rate of 17.3.

The differences between Birth Rates and Crude Death Rates in the 63 cities were:

Difference per 1,000 pop.	No. of Cities	Average Difference per 1,000 pop.
Less than 0	1	—1.0
0 — 4.9	3	2.9
5 — 9.9	14	8.2
10 — 14.9	27	12.1
15 — 19.9	15	17.2
20 — 22.9	3	21.6
Total	63	12.3

The above table shows that, with the exception of 4 cities, all of the surveyed cities in the birth registration area had a substantial surplus of births after deducting the number of deaths occurring locally. Expressed in rates per 1,000 of population, the average surplus for 1921 was 12.3. The year 1921 was chosen as a representative year. No account has here been taken of the possible influence of institutions which might affect the birth rate or the death rate.

CHAPTER II

ORGANIZATION AND PERSONNEL OF THE HEALTH DEPARTMENT

The organization of the health department in the 86 cities varies extensively. When a department is adequate to perform the essential work which it is created to do, variety in detail of organization is natural and desirable. But when the variety takes the form of neglecting the basic and essential requirements of effective health work, it becomes reasonable to recommend more uniformity in organization. One of the logical outgrowths of this survey was the development of a reasonable plan of community health organization for cities of this size which could be used as a guide. The organization which is recommended in Section IV is considered practical and within the limits of possible attainment for such communities.

Any health department, if it is to do effective work, must have a minimum of trained and capable personnel. The variations in this respect which prevail in the 86 cities are striking. At the one extreme there is found a city, like Woonsocket, which does not have a single full-time employee in its health department and which provides only for 4 part-time employees who are reported to devote a total of 6 hours per week to their official duties; and at the other extreme there is the city of Portland, Maine, which provides a total of 24 full-time and 9 part-time workers, most of whom are thoroughly trained in public health work.

PROFESSIONAL EDUCATION OF HEALTH OFFICERS

The foundation for effective health work in any community is the employment of a full-time, trained and capable health officer. Specific information is given in the next table concerning the employment of full-time and part-time health officers in the 86 cities, classified according to their professional education.

Professional Education	Full-time	Part-time	Total
M. D. degree only	26	37	63
M. D. plus C. P. H., or M. S. degrees	2	0	2
Laymen, without professional degrees	14	3	17
Laymen with B. S. or M. S. degrees	2	0	2
D. V. M. degree	1	1	2
Total	45	41	86

An analysis of this table shows that 45 of the 86 cities employ full-time health officers, whereas 41 cities employ part-time health officers. Moreover, of these 41 cities, 24 employ part-time health officers who are devoting half time or more (but less than full time) to their official duties, and 17 cities employ health officers who are devoting less than half time. Several interesting observations may be made from this analysis. First, we have evidently progressed in health work to a degree where it is possible to say that not a single city in communities of the size under consideration is so backward in health work as not to provide any health officer at all. Although the amount of time devoted to health work by the health officers in some of these communities seems so small as to be of little consequence it is nevertheless promising to find a health official in every community. It is still more promising to observe that over 50 per cent of the 86 cities employ health officers on a full-time plan, and that 80 per cent of the cities employ health officers on a half-time basis or better.

It would seem evident that the service which the part-time health officers render cannot possibly be as far-reaching and as constantly available as that which is given by full-time workers whose entire function is the protection of the public health.

While it is hardly possible to analyze with sufficient accuracy the qualifications of the health officers from the standpoint of experience, it is possible to report on their professional training so far as this is indicated by the presence or absence of professional degrees. Of the 45 full-time health officers found in these cities 28, equivalent to 62 per cent, had the medical degree, and of these only 2 had had a special public health degree. On the other hand, of the 41 part time health officers employed in these communities 37, or 90 per cent of those observed, had the medical degree and none had had special public health degrees. Of the 37 part-time health officers who held the medical degree, all were engaged in private practice.

HEALTH SURVEY OF 86 CITIES

SALARIES PAID TO HEALTH OFFICERS

The following table analyzes the findings regarding salaries paid to the full-time and to the part-time health officers in the 86 cities.

Salary Scale	Full-time		Part-time		Totals	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
\$5,000 or more	6	13	0	0	6	7
\$4,000 — \$4,999	13	29	4	10	17	20
\$3,000 — \$3,999	10	22	12	29	22	26
\$2,000 — \$2,999	9	20	12	29	21	24
\$1,000 — \$1,999	7	16	13	32	20	23
Less than \$1,000	0	0	0	0	0	0
	—	—	—	—	—	—
Totals	45	100	41	100	86	100

It is clearly indicated that the higher salaries in public health work, so far as health officers are concerned, go to the full-time officers, over 42 per cent of the full-time health officers receiving \$4,000 or more a year. Nevertheless, it is interesting to note that almost 10 per cent of the part-time health officers were receiving between \$4,000 and \$5,000 per year. Of greater significance, however, is the fact that nearly 59 per cent of the part-time health officers were receiving between \$2,000 and \$4,000. To many minds the question will arise whether greater returns would not accrue to a city expending a little more and employing the full-time service of a sanitarian of unusual training and ability. The summary of both full- and part-time health officers combined is likewise presented in the preceding table. In the following table the data are rearranged to show the average, maximum and minimum salaries paid to full-time and part-time health officers.

SALARIES OF FULL-TIME HEALTH OFFICERS

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	15	\$4,613	\$5,500	\$4,000
Middle Third	15	\$3,599	\$4,000	\$2,900
Lower Third	15	\$1,999	\$2,700	\$1,200
Entire Group	45	\$3,404	\$5,500	\$1,200

SALARIES OF PART-TIME HEALTH OFFICERS

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	14	\$3,525	\$4,000	\$3,000
Middle Third	14	\$2,439	\$3,000	\$2,000
Lower Third	13	\$1,332	\$1,800	\$1,000
Entire Group	41	\$2,459	\$4,000	\$1,000

It has been shown that few health officers have had special public health training in a professional school. On the other hand, many have had years of experience. In these years they may have kept abreast of the times and become highly proficient, or they may have stood still or retrogressed. Just what constitutes satisfactory public health training it is difficult to say.

Two of the 86 cities, namely, Perth Amboy and Wichita Falls had health officers who were veterinarians.

APPOINTMENT OF HEALTH OFFICERS

The method of appointment of health officers is summarized in the following table:

Appointed by	Full-time		Part-time		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent
Board of Health	22	49	9	22	31	36
City Manager or Mayor	7	16	18	44	25	29
City Commission or Council	13	29	9	22	22	26
Election	1	2	4	10	5	6
Professional Position at a						
Medical School	1	2	0	0	1	1
Commissioner of Public Health	1	2	1	2	2	2
Totals	45	100	41	100	86	100

It will be observed that almost 50 per cent of the full-time health officers are appointed by their respective Boards of Health, whereas only 22 per cent of the part-time health officers are appointed in this way. On the other hand, only 16 per cent of the full-time health officers are appointed by the city manager or mayor of their respective communities, whereas 44 per cent of the part-time health officers are appointed in this way. These two items would seem to indicate that in those communities where full-time health officers are employed, the health department has been almost entirely removed from the

sphere of undesirable politics, whereas in those communities where part-time health officers are employed the positions in the health department, especially that of the health officer, are still largely considered as political plums. Inasmuch as such health officers usually retire with a change in administration which may occur every two or four years, the unstabilizing effect which this practice has on the development of a sound and far-seeing public health program must react to the detriment of the community.

The preferable practice of having the local board of health appoint the health officer should be encouraged. The appointment should, of course, be for an unlimited period and should depend only on the satisfactory performance of the duties of the office. In this way it will be possible to keep this important municipal department from the undesirable interference of unimaginative and ruthless politicians, and to insure a more complete, well-rounded and satisfactory health program. It is interesting to note in passing that in Augusta the Professor of Preventive Medicine in the Medical School is by virtue of his position the full-time health officer of this community.

PERIOD OF SERVICE OF THE HEALTH OFFICERS

The period of service of the health officers has been tabulated below:

Period in Years	Full-time	Part-time	Total
Less than 1	7	4	11
Between 1 and 2	4	10	14
“ 2 “ 3	5	5	10
“ 3 “ 4	5	6	11
“ 4 “ 5	1	3	4
“ 5 “ 10	14	10	24
“ 10 “ 15	2	3	5
“ 15 “ 20	4	0	4
“ 20 “ 25	3	0	3
Totals	45	41	86

It appears that 23 out of the 45 full-time health officers found in the 86 cities had been in the employ of the health departments of their respective communities for a period greater than 5 years. In some instances the health officers had been employed between 15 and 20 years, and in 3 instances the health officers had been employed for a period greater than 20 years. In Holyoke, Newton, and Salem, and

in West Hoboken the full-time health officers had been employed between 15 and 20 years, and in Altoona, Cedar Rapids and Charleston the health officers had been employed for more than 20 years.

On the other hand, among the 41 part-time health officers, only 13 had been in the employ of their respective health departments for a period varying from 5 to 15 years, and most of them had been in their present positions for less than 4 years. This condition would seem to indicate the undesirability of employing part-time health officers if service of long duration is to be rendered to the community.

BOARDS OF HEALTH

The desirability of having a board of health in each community has long been recognized, as indicated by the fact that most cities in the United States make such provision as an essential means of assisting the health officers in carrying out a satisfactory health program. Ideas concerning the size and composition of boards of health have, however, been various. Not only do boards of health vary materially in the number of members who compose it, but likewise in the qualifications of those members. The impression which most people have concerning the proper qualifications for membership on the local board of health as indicated by the usual practice that prevails, seems to be that the members should be practicing physicians. While it is highly desirable that the medical profession should be represented on the board of health, it is nevertheless true that it is entirely unnecessary and even undesirable for the board of health to be composed either largely or entirely of physicians. It is far more desirable to have the board of health composed of at least three distinct groups in the community in order to bring to bear on the question of health administration, the combined wisdom of the laity as well as the medical profession. The board of health might have on it a physician, a sanitary engineer, a business man, a representative woman and a non-professional, public spirited citizen. This, however, may not always be possible, not only because of the lack of properly qualified individuals, but also because of the limited size of the boards of health. The chief aim, however, should be to have a board of health composed of individuals who are broad minded and far sighted, and who have a deep interest in community betterment as well as a sense of responsibility for the public welfare.

In the 86 cities studied, 52 had a board of health. Of the 34 cities

where the board of health was not provided, 16 had no board of health whatsoever, whereas in the other 18 instances the city commissioners or the city council acted as a board of health when necessary. In 9 instances these groups acted regularly as boards of health. Cities where the city council or the city commissioners act regularly as the board of health or composed the majority of the board are: Hamtramck, Highland Park, Racine, Lincoln, Topeka, Davenport, Butte, Atlantic City and Beaumont. In Macon, Jackson, and Huntington, the board of health is composed of men who automatically became members of the board by virtue of their official positions. In 3 instances, many if not most of the members of the board of health are elected or appointed by the local medical society. In Mobile 5 of the 6 members of the board were appointed in this way; in Montgomery 5 out of the 8 members were so appointed; and in Macon 2 out of the 6 members were so appointed. In Decatur the health department staff represents the board of health. The incongruity of this situation must of course be apparent. The condition was made necessary by the requirement that the health department have a board of health.

The board of health consisting of 3 members is the one that predominates, although that which is composed of 5 members was a very close second. Of the 51 cities having boards of health for which information concerning size was available, 19 were composed of 3 members, 17 of 5 members, 5 of 6 members, 6 of 7 members, 3 of 8 members, and 1 of 9 members. It would seem, therefore, that the customary practice is to provide comparatively small boards of health.

Of the 48 cities having boards of health for which information on the composition of the board was available, 5 were found without any physician on the board, 20 with 1 physician, 8 with 2 physicians, 9 with 3 physicians, 3 with 4 physicians, and 3 with 5 physicians.

In Butte and Berkeley so-called public health advisory councils were provided. The one in Butte should not be considered in this category, for here the advisory council was composed of 3 of the councilmen together with the city physician. The public health advisory council in Berkeley was composed of the mayor, the health officer, and 3 other individuals, 2 of whom were required to be experts in public health.

Those cities which do not have boards of health, but where the city commissioners or the city council act as a board of health, on necessary occasions, are recorded as follows: Springfield, Ill., Cedar

Rapids, Kalamazoo, Saginaw, Hoboken, Passaic, Springfield, O., Altoona, Bethlehem, Chester, Johnstown, McKeesport, New Castle, York, Chattanooga, Galveston, Wichita Falls, and Kenosha.

POWERS OF THE HEALTH OFFICER AND BOARD OF HEALTH

The health officer or board of health had the power to make all appointments in the health department in 63 cities. In 68 instances the health officer or board of health had the power to make rules and regulations affecting health in their respective communities.

Twelve cities employed at least 1 physician other than the health officers, on a full-time basis. Some of these were school physicians, while others did laboratory diagnostic work, or were associated with contagious disease or tuberculosis hospitals operated by the municipal health departments. In 60 cities, one or more physicians other than the health officer were employed on a full- or part-time basis, chiefly the latter. It is therefore evident that 25 cities out of the 85, for which information was available, did not employ a physician other than the health officer either on a full- or part-time basis. These cities are:—Little Rock, Berkeley, Pasadena, San José, Pueblo, New Britain, Macon, Gary, Muncie, Davenport, Topeka, Covington, Shreveport, Bay City, Springfield, O., Butte, Altoona, Bethlehem, Johnstown, Lancaster, Newcastle, York, Woonsocket, Galveston, and Roanoke.

It is, of course, true that in most of these instances the school health work is not under the health department. Nevertheless, this condition indicates that in a considerable proportion of the 86 cities, some of the recognized important municipal health department activities, such as pre-natal, infant, child welfare, tuberculosis, and venereal disease clinics have as yet not been undertaken by the local health departments. In the majority of cases these clinics have been initiated and are being carried on by voluntary health agencies, as is shown in Chapter XVI dealing with the Private Agency.

PUBLIC HEALTH NURSES

The important rôle of the public health nurse in municipal health work has been so definitely established that her value is generally accepted. It was therefore surprising to find that in 19 of the 86 cities, the city health department did not employ a single public health nurse, either on a full- or part-time basis. These cities are East

St. Louis, Illinois; Terre Haute and Muncie, Indiana; Cedar Rapids and Davenport, Iowa; Covington and Lexington, Kentucky; Shreveport, Louisiana; Bay City, Michigan; Springfield, Missouri; Butte, Montana; Chester, Lancaster and McKeesport, Pennsylvania; Pawtucket and Woonsocket, Rhode Island; and Beaumont, Galveston and Wichita Falls, Texas. The lack of public health nurses in the health department in these cities indicates that certain important health activities are unquestionably being seriously neglected by the health department and that the educational emphasis is largely lacking in these health departments.

Where public health nurses were part of the personnel of the health department, it was customary to find them employed on a full-time basis. In a few instances, notably those of Brockton and York, the public health nursing work of the health department was performed by the local visiting nurse association, and in these 2 instances, the health department provided some of the necessary funds to make this arrangement possible. It is interesting to note that in both cities, the work was effectively performed.

DENTISTS

There were 16 cities where the health department employed a full- or part-time dentist. These cities were New Britain, Everett, Fitchburg, Haverhill, Newton, Malden, Hamtramck, Highland Park, Jackson, Lansing, Saginaw, East Orange, Perth Amboy, Elmira, Winston-Salem and Racine. It is impossible however, to draw any definite conclusions concerning the dental service available in the 86 cities if the health department alone is considered as there are numerous cities where the dental service is under the department of education, or a voluntary health organization, like the Red Cross. In Portland and in Pawtucket, excellent dental clinics were being maintained by the Red Cross. The work was particularly extensive and satisfactory in Portland, and here the Health Department cooperated by providing a public health nurse on a full-time basis to serve at the dental clinic. Those cities where a dentist was employed by the health department on a full-time basis were, Fitchburg, Newton, Saginaw and Perth Amboy. In Saginaw, there were 3 full-time dentists, and the work was so effective that a considerable reduction in the number of dental defects among the school children has been observed, and an effort is now being made to clear up dental

deficiencies in the pre-school period. The campaign for healthy, normal teeth among children will undoubtedly receive greater emphasis in the pre-school period in the future, as it is possible through education and adequate treatment to prevent most of the dental defects which are normally observed later in child life.

It is interesting to note that only in Everett, Pittsfield and Haverhill, did the local health department employ dental hygienists, the one in Everett being employed only on a part-time basis.

SANITARY INSPECTORS

There has always been a considerable difference of opinion concerning the degree to which a municipal health department should be engaged in conducting sanitary inspections. While in many instances, sanitary inspectors have been used as quarantine officers, and to fumigate premises after the termination of certain communicable diseases, there has been a tendency to replace them with trained public health nurses, whose scientific training is in the great majority of cases, far superior. In spite of the employment of sanitary inspectors for placarding and fumigating, the great bulk of their work still consists in making inspections for nuisances, or in following up of nuisances which have been reported to the health department. While it is doubtless too early to adopt the radical view that sanitary inspections should be almost entirely eliminated from the work of the health department, it is nevertheless true, that a large expenditure of the public funds for the employment of numerous sanitary inspectors should be strongly condemned, primarily on the ground that the funds can be used to greater advantage in protecting and promoting the public health, if spent in other directions. With this situation in mind, it is therefore interesting to note the conditions which prevailed in the 86 cities. Of the 84 for which information was available, 26 did not have more than 2 sanitary inspectors; 41 had from 3 to 5 sanitary inspectors; 13 had from 6 to 8 sanitary inspectors; and 4 had more than 9 sanitary inspectors.

It appears, that in general, the health departments of these 84 cities employed more sanitary inspectors than was warranted. This condition was particularly pronounced in the southern cities, where it was usual to find 6 or more inspectors among the personnel of the health departments. The cities in California and to some extent those in Michigan, New Jersey and Pennsylvania also employed a large

number of inspectors. In this list should also be included New Britain and Portland. On the other hand, the situation in the Massachusetts cities was so different, that it is worthy of special notice. In this state of the 11 cities surveyed, only Holyoke and Brockton had more than 3 sanitary inspectors. In the former there were 8 full-time sanitary inspectors, a condition totally unnecessary for effective health administration; and in the latter, 4 full-time and 2 part-time sanitary inspectors were employed. Of the other 9 cities, only in Haverhill were more than 2 full-time inspectors employed. Here there were 3 sanitary inspectors, but only 1 was employed on a full-time basis. Even though the privy and mosquito problems are not as prominent in the north as in the south, it would seem that the emphasis which is being placed on sanitary inspections in the south is perhaps excessive. An effort should be made in all communities of this size where there are more than 3 sanitary inspectors, to evaluate the work of the health department in terms of distinct accomplishments, in order to determine whether or not the expenditure of a portion of the funds along other lines would yield eventual returns.

BACTERIOLOGISTS

It is well recognized that the maintenance of a municipal health department laboratory is an essential aid in the diagnosis and control of certain communicable diseases. Its value to the community in this respect, as well as in serving as a means for obtaining the interest and cooperation of the practicing physicians in the general health program, is very great.

The number of cities employing 1 or more laboratory workers is listed below:

No. of Cities	No. of Workers
43	1
13	2
4	3
1	4
1	5
2	N.R.

In 62 of the 64 laboratories supported entirely or in part by the department of health, 90 laboratory workers, who vary in their training from inexperienced technicians to capable bacteriologists and chemists, are employed.

FULL-TIME EMPLOYEES

Since a certain irreducible minimum in personnel is absolutely essential for adequate health supervision in cities of the size under consideration, and for comparison with the "Proposed Plan of Organization of Community Health Work" which is outlined for cities of this size in Section IV of this Report, it is interesting to classify the 86 cities according to the number of full-time and part-time employees in the health department. In order to make the comparison a just one, it was necessary to exclude the personnel engaged at the contagious disease and tuberculosis hospitals, as well as those employed in the collection and disposal of refuse, and in the digging of ditches for the prevention or control of malaria. After making these deductions, the full-time health department personnel in the 84 cities for which information was available, is given below:

No. of Cities	No. of Full-time Workers
1	0
1	1
3	2
3	3
7	4
5	5
2	6
11	7
9	8
7	9
24	10-14
6	15-19
5	20 & over

The wide variation that prevailed in the 84 cities in regard to the number of full-time workers in the health department deserves special notice. One city in this group, namely, Woonsocket, did not have a single full-time employee in its health department. The city of Muncie with only 1 full-time employee is almost in the same category. On the other hand, there were 5 cities, Augusta, Mobile, Portland, Sacramento and Winston-Salem, which had 20 or more full-time health department employees. This marked discrepancy in health department organization indicates the advisability of considering what a sound efficient health department for cities of this size really should be. Unquestionably those cities with few full-time health

department employees are not doing what they should to protect and promote the public health.

An analysis of the preceding table shows that in 15 cities, the health department had fewer than 5 full-time employees; that in 34 cities the number varied from 5 to 9; that in 24 cities the number varied from 10 to 14; that in 6 cities it varied from 15 to 19; and that in 5 cities, the number of full-time health department employees was 20 or more. The usual number seems to be 7 full-time employees, observed in 11 of the 84 cities.

PART-TIME EMPLOYEES

No study of the personnel of municipal health departments would be complete without a consideration of the number of part-time employees. The number found in 84 of the 86 cities is presented in the following table:

No. of Cities	No. of Part-time Workers
9	0
14	1
15	2
15	3
8	4
3	5
6	6
5	7
2	8
3	9
2	10-14
0	15-19
2	20 & over

In 9 cities the health department did not employ any part-time workers, while 14 cities had 1 part-time employee; 15 cities had 2, and another group of 15 cities had 3. It would seem doubtful whether any well organized municipal health program can be conducted effectively without at least a few part-time employees. This is particularly true, if the health department operates the various clinics which are now included in its legitimate activities. Such clinics require expert medical service, and this can usually most readily be obtained on a part-time basis. It is probably true that the cities which do not have any part-time workers in the health department

are not operating such clinics, or are conducting them only to a limited and inadequate degree. It is interesting to note that the most frequent number of part-time workers is 2 or 3. Brockton and Kenosha had 20 or more part-time health department employees, as the former employed the large numbers of public health nurses of the Visiting Nurse Association on a part-time basis, and the latter employed 21 school physicians for 3 hours a day over a period of 4 weeks each year.

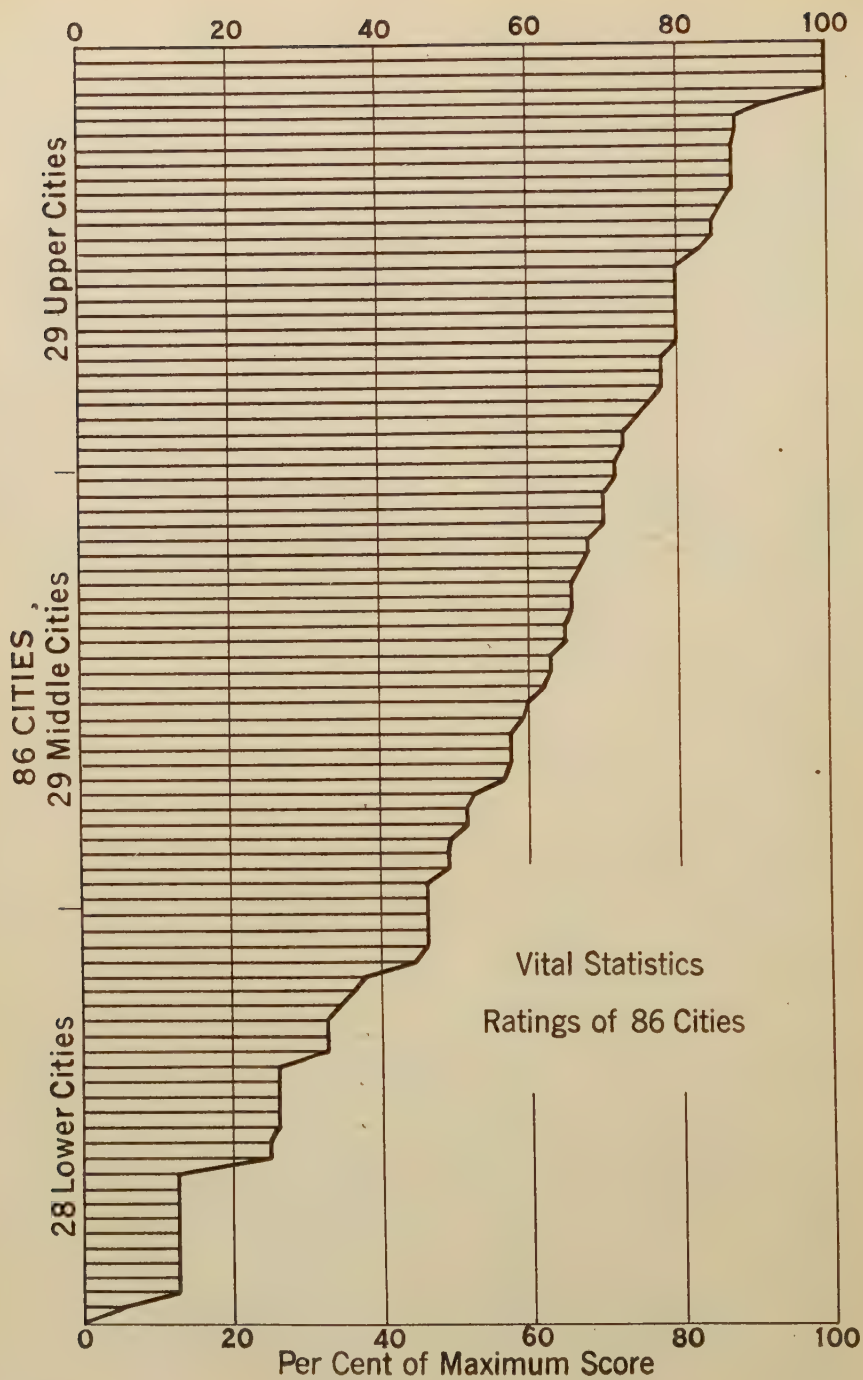


CHART 11

CHAPTER III

VITAL STATISTICS

The keeping of vital statistics attains to a dignity and importance in older countries which it frequently lacks in the newer. America has still a long way to go before its regard for the vital and unescapable facts of birth and death and its proper recording of these facts receive the careful attention which are given them in many countries.

Completeness of reporting of births and deaths is the first essential in the adequate care of vital statistics and the United States Bureau of the Census has established standards which states and cities must attain before being admitted to the so-called registration areas where registration is supposed to be at least 90 per cent complete. Twenty-five years ago only 10 states and the District of Columbia could meet such standards for the death registration area, while the birth registration area had not yet been created. Today, owing to the constant activity of the Census Bureau, 88.4 per cent of the population of the United States are included in the death registration area and 76.1 per cent in the birth registration area. The goal has been set for every state to be included in both areas by 1930, and there is good promise that this will be achieved.

But completeness of reporting is only the beginning. Promptness and accuracy are indispensable to effective record keeping. Accessibility is the next requirement and tabulation and analysis are means to the end, which will always be effective use. The nation-wide redistribution of births and deaths to the place of residence where they properly belong still lies in the future.

The 83 largest cities surveyed in 1920 reported an expenditure for vital statistics of 1.5 cents per capita. In the 86 smaller cities surveyed in 1924, the administration of this important function rarely occupies more than a minor fraction of the time of a poorly paid official.

The limited use to which the records are put in the smaller cities is shown in subsequent pages and indicates the need of that profes-

sional leadership and technical knowledge which knows how to utilize such facts for the intelligent direction of public health work.

RESPONSIBILITY FOR THE SERVICE

In 86 cities in 31 states the surprising fact is that the administration of so slightly regarded a municipal activity as the keeping of vital statistics is so frequently found under the same department. To be sure no less than 6 different sources of administrative responsibility are recorded, but a majority of the cities wisely recognize the department of health as the proper division of the city government to administer this important service. This arrangement is generally considered desirable in order that the records may always be immediately available for the continuous study that an intelligent direction of the health work of the city requires. Furthermore there should be an added interest and desire to secure complete, accurate reporting and to maintain the records in the condition most practicable for effective use, if the responsibility for these truly vital statistics is placed upon the department which is organized to utilize them for the welfare of the public.

The condition which obtains in this respect may be seen from the following table:

Vital Statistics Kept By	No. of Cities
Department of Health	49
City Clerk	22
Local State Registrars	12
Department of Health and a Local State Registrar	1
Department of Streets	1
Other City Employee	1
Total	<hr/> 86

The practice of placing the recording of vital statistics under the city clerk is a characteristic of the 15 cities in the New England states, in 3 Michigan cities and in Arkansas, Iowa and Kansas. There are undoubted arguments for the keeping of vital statistics by the city clerk, chief among which is the resultant centralization of all city records. Another method employed in the 8 cities of Pennsylvania, and in Chattanooga, Davenport, Wichita Falls, and Springfield, Missouri, is that of state operation through local registrars, appointed

and paid by the state department of health. As a rule the appointee has no relation to the health department with a result upon the value and usefulness of the vital statistics which can only be described as exceedingly unfortunate. An exception occurs in Johnstown, Pennsylvania and in the New Jersey and New York cities, where the local health officer or his deputy usually acts as the registrar through an appointment by the state department of health. In Shreveport, Louisiana, an old dispute between the city and the state department of health, arising at the time of the adoption of a state-wide Vital Statistics Act, has resulted in a deplorable duplication in the reporting of births and deaths independently by the two registrars, state and local, who occupy adjacent offices. Undertakers are required to take out burial permits from each officer. In Bethlehem the registration of births and deaths is divided territorially between 3 registrars, all appointees of the state department of health, with consequent lack of unified city statistics.

BIRTH AND DEATH REPORTING

REMUNERATION FOR BIRTH AND DEATH REPORTING

It has been a widespread practice to encourage the reporting of births and deaths on the part of physicians and midwives by the payment of a small fee for each case reported. The fee principle has also been employed as a means to help defray the expenses of the office, or as a means of income for the registrar. The following table summarizes the current practice in this respect:

Fee Received by	Registration of	
	Births	Deaths
Registrar or Office alone	33	33
Physician or Midwife alone	19	3
Both Registrar or Physician etc.	15	9
No one	19	28
Undertaker	..	13
	<hr/> 86	<hr/> 86

The customary fee is 25 cents for each birth or death certificate filed. The exceptions are for the Wisconsin cities which pay only 15 cents for births and deaths reported; Augusta, Georgia, which pays 50 cents; the Michigan cities which pay 50 cents for births only and Springfield, Ohio, which pays 50 cents for deaths only.

COMPLETENESS OF BIRTH AND DEATH REPORTING

At the time of the survey all but 4 cities in 3 states were included in the death registration area and all but 17 cities in 11 states, in the birth registration area. Since the survey was made the inclusion of Florida, Iowa and West Virginia in the birth registration area has placed 5 of the 17 cities in this desirable category, leaving only 12 cities outside the birth registration area at the time of writing. The cities under consideration in this report which were not included in the death registration area are Little Rock, Arkansas, and Wichita Falls, Texas. Those lacking from the birth registration area are found in the following states: Alabama, Arkansas, Colorado, Georgia, Louisiana, Missouri, Tennessee and Texas.

The degree of completeness of birth reporting is not determinable without tests of various kinds, such as are employed by the Bureau of Census in its check-up of cities and states desiring admittance to the registration area. In the course of the health habit questionnaire given to fifth grade children in the 86 cities, a question was asked which was designed to make possible at least one check on the completeness of birth registration in each city. The children were asked to write on a special printed slip of paper the name, address, age and date of birth of any brothers or sisters under 1 year of age. These reports were then looked up in the office of the registrar of vital statistics, after the elimination of any obviously incorrect or illegible reports. The accuracy of such a test varies with a number of factors so that the finding of 75 per cent of the reported births might be considered as representative of an actual reporting efficiency of 90 per cent or more. Judging by the results in the 74 cities in which the test was carried out, 57 per cent of the cities attain an acceptable degree of reporting. In 20 cities, or 27 per cent, the percentage of reports found was 90 or more. On the other hand only 7 cities were below 50 per cent. The importance of complete birth registration needs no discussion, but the wide discrepancies which were found in many cities between the reported number of births, and consequently the infant mortality rate obtained locally, and the birth reports of the Bureau of the Census, reveal how inaccurate many of the figures must be.

PROMPTNESS OF BIRTH REPORTING

The local or state ordinances requiring the reporting of births within a specified time vary widely, as seen from the following table:

No. of Days	11½	2	3	4	5	6	7	10	14	20	60
No. of Cities	2	14	1	5	28	1	1	28	1	4	1

While most of the cities permit a 5 or a 10 day limit, the range extends from 36 hours to 60 days. It is upon the question of reporting that the interests of the health department and those of any other registering body diverge. The health department desires, if it is equipped to perform effective infant welfare work, the reporting of births at the earliest possible date, regardless of whether the report is complete at that time in every detail. The city clerk or other official who may act as the registrar prefers on the other hand a complete report at a later date to an early incomplete report. This difficulty has sometimes been overcome in cities where late reporting is permitted by law by developing a practice of telephoning to the health department the fact of a birth with address of the parents and awaiting until further details may be obtained before sending in the official report.

VERIFICATION OF BIRTH AND DEATH CERTIFICATES

The first essential after prompt and complete recording of vital statistics is the checking and verification of the reports as far as is practically possible. This should be a routine procedure in a well organized bureau of vital statistics. Every item should be checked to see whether it has been properly filled out and if not the necessary steps should be taken to obtain the desired information. The cause of death which has been assigned should be critically considered and if not in agreement with the international rules established for the classification of causes of death the physician reporting the death should be consulted. As seen from the table below 53 of the 86 cities reported that death certificates were checked and verified, though complete thoroughness in this respect was seldom claimed. Death certificates of infants were reported as being checked against birth certificates, as a check for birth reporting, in 39 cities.

THE TABULATION OF VITAL STATISTICS

The valuable use of vital statistics must depend largely upon the convenient and intelligent tabulation of the verified reports. It is surprising, then, that the tabulation of the death certificates by cause,

age, nativity, color, and the nativity of the mother is practiced in a relatively small proportion of cities, as may be seen from the following table. The cause of death is tabulated in three-fourths of the cities, but the other classifications are used in only about one-third or less of the cities.

	Yes	No	No Partly Record	
Death Classified by				
Cause	66	18	2	0
Age	37	38	10	1
Nativity & Color	24	52	9	1
Nativity of Mother	11	70	4	1
Report of Vital Statistics published annually	35	46	4	1
Vital Statistics filed in Health Department	53	27	6	0
Death Certificates checked and verified	53	23	0	0
Infant Death Certif. checked vs. Birth Certif.	39	47	0	0
Notification of birth registration sent parent by mail	29	57	0	0
Notification of Birth Reg. by nurse	13	67	0	6

In an effort to reduce the deaths in the first week of life, some health departments have been taking advantage of the knowledge of a new birth obtained from the birth certificate and either send a nurse immediately to the homes in question or send an official acknowledgement of the receipt of the birth certificate, accompanying this with educational literature. The former practice was observed in 13 cities; the latter in 29 cities.

THE APPRAISAL OF VITAL STATISTICS

The application of the Appraisal Form to the practices followed in the keeping of vital statistics has made possible a rating of the status of this activity in every city. The scores attained are made comparable with the scores of other activities by being expressed in terms of the percentages of the maximum score in each case. The score for each city is given in Chart 11, and shows a rather even decline throughout the 86 cities from a 100 per cent score, achieved by 4 cities to a 0 per cent given 1 city. Eleven cities score less than 20 per cent, while 15 cities score over 80 per cent. The general character of the chart is similar to that shown for infant welfare.

The same data have been tabulated below to show the average, maximum and minimum for the 86 cities, when divided into 3 groups equal in number, the upper group containing the 29 cities with the

highest scores. This method of arrangement brings out the fact that the upper third of cities average 84 per cent of the maximum score, the middle third 69 per cent and the lower third 25 per cent.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	84	100	72
Middle Third	29	60	72	47
Lower Third	28	25	47	0
Entire Group	86	57	100	0

THE APPRAISAL FORM FOR VITAL STATISTICS

Below are reproduced the items and values tentatively adopted as described elsewhere for appraising vital statistics.

VITAL STATISTICS (Total Points 60)

	Value of Item
<i>Registration</i> (8 Points)	
City in Registration Area for Deaths	3
City in Registration Area for Births	5
<i>Classification</i> (32 Points)	
Deaths classified by:	
Cause	12
Age and sex	8
Nativity and color	5
Births classified by nativity of mother	5
Report on vital statistics published annually	2
<i>Verification</i> (20 Points)	
Death certificates from communicable disease (tuberculosis, typhoid, diphtheria, scarlet fever, smallpox, measles, whooping-cough) routinely checked against disease reports	8
Deaths under one year and stillbirths checked against reported births and stillbirths	12

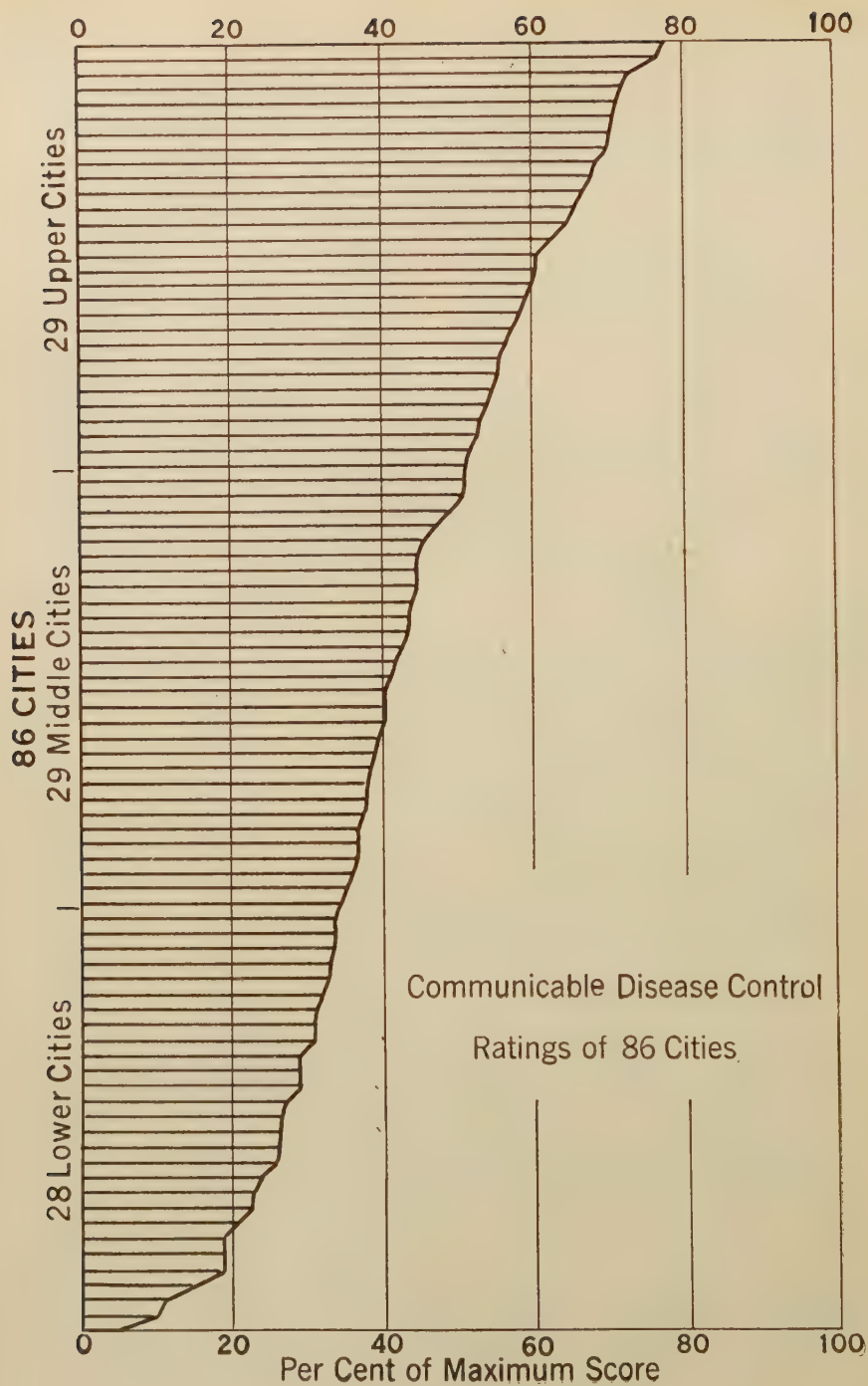


CHART 12

CHAPTER IV

COMMUNICABLE DISEASE CONTROL

The discussion of communicable disease control in a report of this character is a difficult matter. The problem of presenting information of real value in a practicable way is a real one. Pages could be devoted to a description of what cities profess to be doing, but it is by no means certain that such a statement would be of any practical value.

VARIETY OF PROCEDURES

A surprising variety of methods and procedures, of regulations required and practices followed, would be recorded. In one city the release from isolation of diphtheria is 10 days with 1 negative culture, in another 3 weeks or until released by a doctor, a third, 3 weeks and 2 negative cultures on successive days. For scarlet fever it

Procedures	Measles	Diph.	W. C.	S. F.	Typhoid
Reportable	85	86	85	86	86
Placarded	65	86	47	85	..
Instruction of family	72	82	62	81	76
Contacts kept from school	77	..	62	..	..
Contacts return to school	..	*	..	†	..
Immunes attend school	69	..	73	..	..
Efforts to find carriers	..	..	..	..	53
Contacts routinely immunized by H. D.	..	..	..	..	14
Contacts routinely immunized Priv. Phy.	..	..	..	..	24
Process of Release	..	86‡	..	86||	..
Terminal Disinfection	..	60	..	61	..
Formaldehyde fumigation	..	33	..	27	..
Cleansing	..	13	..	16	..
Method not specified	..	12	..	15	..
On request	..	2	..	3	..
None	..	25	..	25	..
Information unavailable	..	1	..	0	..

* 29 different procedures followed.

† 24 different procedures followed.

‡ 28 different procedures followed.

|| 25 different procedures followed.

varies from 3 weeks to 6 weeks or on the physician's permission. Instruction of the families is given in cases of measles in 70 cities, in whooping cough in 60 cities, in typhoid in 76 cities. Child contacts are permitted to return to school after exposure to diphtheria cases under no less than 29 different conditions, with such variations as 1 negative culture, 3 days, 21 days, 1 week after quarantine is removed, or the judgment of the attending physician. Indeed the main deduction to be drawn from the study of the procedures followed in the 86 cities for the control of the more common communicable diseases is that there is no uniformity whatsoever and that the practices are based chiefly upon tradition and individual preference. Even the provisional recommendations of the Committee on Communicable Disease Control of the American Public Health Association are largely unheeded. The preceding table gives the number of cities in which the various procedures specifically called for in the survey, were practiced.

It is regrettable that during the many years of organized health department supervision over communicable diseases, so little scientific study has been given to the question of the effectiveness of various methods of administrative control of such diseases as measles, whooping cough, scarlet fever, and even diphtheria, that the value of such procedures as placarding, instruction, isolation, hospitalization, supervision of contacts, either as ideally conceived or as actually employed, is not known today. There is no assurance that the reductions in the mortality rates, such as they are, are due to the wide variety of methods imposed with a minimum of supervision upon an often antagonistic household.

Since there is so little guarantee that any of the common administrative measures for control of the patient and his contacts, other than specific immunization, are really responsible for reducing the incidence of these common respiratory communicable diseases, there can be no great value in attempting to draw any conclusions from the varied practices in these cities. The growing knowledge of the etiology of measles and scarlet fever, with the accompanying development of protective sera, should produce far-reaching results both in the prevention and in the treatment of these diseases, which may be comparable to the results obtained since 1894 in the treatment of diphtheria with antitoxin and more recently in the prevention of the disease with toxin-antitoxin.

REPORTING OF CASES

It is perfectly evident, however, that the basis of any activity directed against communicable disease rests upon prompt knowledge of the existence of every case of the disease. How complete and prompt these reports are will vary according to the educational efforts, backed at times by legal pressure, on the part of the health officer. One needs only to study the following tables giving the experience in these cities averaged over a four year period to appreciate that even the basic procedure of case reporting is far from complete.

The first table shows the number of cases of measles, diphtheria, whooping cough, scarlet fever, smallpox, and typhoid fever per 100,000 population for those of the 86 cities which had records for at least 3 of the 4 years, 1920, 1921, 1922 and 1923. Such information was lacking in from 13 to 20 cities. The rates are given, as usual, not only for the group as a whole, but for the upper, middle and lower thirds, and the maximum and minimum instances.

Disease	No. of Cities	Total Average	Upper Third Average	Middle Third Average	Lower Third Average	Max- imum	Min- imum
Measles	68	739	1200	668	331	1932	10
Diphtheria	71	253	405	221	126	708	80
Whooping Cough	66	216	460	151	38	778	0
Scarlet Fever	73	213	351	198	84	700	20
Smallpox	70	74	196	30	1	482	0
Typhoid	71	41	79	33	12	146	0
Total		1536	2691	1301	592	4786	110

It must be emphasized that the above data do not pretend to indicate the existence of all the cases of the diseases in question but only those that are reported. The "Proposed Plan of Organization of Community Health Work for a City of 50,000 Population" which appears in this report, estimates an average of 1,200 cases of communicable diseases to occur annually per 50,000 population. When allowance is made for the cases unreported and for other diseases not mentioned in the above table, the 1,200 case estimate is not so inconsistent with the figure of 1,536 reported cases per 100,000 population, or 768 per 50,000. The upper third of cities reported 1,346 cases per 50,000 population.

CITIES ATTAINING REPORTING STANDARD

The question as to the completeness of communicable disease reporting cannot be answered with real precision without special tests in every city, but the ratio of cases reported to the deaths occurring from each disease gives a fairly sound indication of the state of reporting. Such ratios must be compared with standard ratios and the Appraisal Form gives such standards, without claiming for them anything more than that they are based upon conservative average experience. They are subject to revision. The number and percentage of cities attaining the standard ratio are presented in the next table. The 20 to 27 cities not included reported information for less than 3 years.

Disease	Std. cases per death	Total No. of cities	Cities Attaining Standard	
			No.	Per cent
Measles	100	60	48	80
Diphtheria	15	64	41	64
Whooping Cough	25	59	32	54
Scarlet Fever	50	66	45	68
Typhoid	10	63	16	25

While 80 per cent of the cities reporting full information attained the standard of 100 cases per death for measles, 68 per cent did so for scarlet fever, 64 per cent for diphtheria, 54 per cent for whooping cough and only 25 per cent for typhoid fever. One reason for the poor showing that is made by typhoid fever is that the number of cases is often so small that the ratios are correspondingly large. In 28 cities the cases were less than 50 in number, and a very few deaths may establish a ratio which exceeds the standard of 1 death per 10 cases. On the other hand 5 cities reported an average of 22 cases with no deaths. A similar situation occurred in several other diseases. Smallpox cases were reported in 38 cities with no deaths, though the average number of cases was 135. Also in 5 cities averaging 123 cases of scarlet fever, no deaths were reported, and in 3 cities averaging 755 cases of measles, no deaths were reported. Such a situation did not occur in diphtheria or whooping cough among the cities with full records. There were, moreover, a few cities in which the number of deaths reported during the 1920-1923 period exceeded the number of cases reported, a situation which bespeaks with eloquence the laxness of case reporting. This occurred in 2 cities in the case of

typhoid, and in 2 cities in the case of whooping cough. In 1 city measles deaths were reported, although no report of the cases was made.

CASES REPORTED PER ANNUAL DEATH

The number of cases reported per death, averaged for the 1920-1923 period, is given in the following table to show how nearly the average experience of these cities agrees with the reporting standards for the diseases called for in the Appraisal Form, reprinted at the end of this chapter. It will be noticed that the average of the cities reporting is well above the standard set in each disease except typhoid. This is true also for both the upper and middle thirds of cities.

Disease	No. of Cities	Total Aver.	Upper Third Aver.	Middle Third Aver.	Lower Third Aver.	Max- imum	Min- imum
Measles	56	348	710	244	76	1133	13
Diphtheria	64	20	31	16	11	56	8
Whooping Cough	56	61	140	32	7	570	1
Scarlet Fever	61	74	126	60	34	347	12
Smallpox	8	35	—	—	—	928	26
Typhoid	56	7	12	6	3	32	2

MORTALITY FROM COMMUNICABLE DISEASES

The burden that communicable diseases entail upon a community is not limited to illness alone, with its attendant inconvenience, loss of school time and crippling sequelae. A considerable toll in human lives is paid every year in every city. The mortality for any 1 or 2 years may be atypical, and in those diseases like measles which are marked by a periodical increase and decline, the representative mortality should include years of high and of low mortality. Consequently the mortality rates per 100,000 population presented in the following table are based on 3 or 4 year averages over the 1920-1923

Disease	No. of Cities	Total Av. Rate	Upper Third Av. Rate	Middle Third Av. Rate	Lower Third Av. Rate	Minimum Av. Rate	Maximum Av. Rate
Scarlet Fever	69	3.6	1.1	2.8	7.0	0.0	11.1
Diphtheria	70	14.6	6.9	14.1	23.2	2.9	47.9
Measles	66	4.0	1.0	2.9	8.1	0.0	17.7
Whooping Cough	70	5.9	2.3	5.2	10.5	0.0	21.6
Typhoid	70	7.4	1.6	4.8	16.0	0.0	33.8

period. The 16 to 20 cities which are not included in the table are cities in which the records were incomplete or unobtainable locally for more than 2 years.

It is a discouraging commentary on the intelligence of doctors and laymen that the disease which medical science can most easily prevent and for which a curative has been available for 35 years should lead the list of the 5 common communicable diseases in its death taking. The average mortality rate of 70 cities for diphtheria was 14.6 per 100,000 population. Typhoid fever was only half so costly to these cities with a rate of 7.4. Whooping cough, 5.9; measles, 4.0; and scarlet fever, 3.6 are encouragingly low. The cities of the registration area of the United States as reported in the United States Census Mortality Statistics for 1921 had the following specific rates: diphtheria, 19.0; typhoid, 6.1; whooping cough, 7.7; measles, 4.2; and scarlet fever, 6.2. The surveyed cities had lower rates in diphtheria, whooping cough, measles and scarlet fever.

COMMUNICABLE DISEASE MORTALITY AS RELATED TO GEOGRAPHIC DIVISIONS OF THE COUNTRY

Geographic Div.	Scarlet Fever		Diphtheria		Measles		Wh. Cough		Typhoid	
	No. of Cities	Av. Rate	No. of Cities	Av. Rate	No. of Cities	Av. Rate	No. of Cities	Av. Rate	No. of Cities	Av. Rate
New England	15	4.6	15	16.1	15	5.0	15	9.0	15	2.5
Middle Atlantic	10	5.4	11	17.8	9	5.2	9	4.6	10	3.7
East North Central	15	4.6	14	16.7	13	3.2	15	3.7	15	5.6
West North Central	5	2.8	5	13.0	5	3.4	5	5.9	5	7.5
South Atlantic	10	1.7	10	10.8	10	5.5	10	8.2	10	18.9
East South Central	5	2.0	5	7.9	4	2.1	5	5.0	5	12.9
West South Central	3	1.3	3	5.2	3	1.0	3	2.0	3	8.3
Mountain	2	1.8	2	28.4	2	1.5	2	7.6	2	5.1
Pacific	4	2.6	5	13.7	5	2.8	6	4.1	5	6.5
Total	69	3.6	70	14.6	66	4.0	70	5.9	70	7.4

The geographic divisions embrace the following states in which there were surveyed cities:

New England—Maine, Massachusetts, Rhode Island, Connecticut.
 Middle Atlantic—New York, New Jersey, Pennsylvania.
 East North Central—Ohio, Indiana, Illinois, Michigan, Wisconsin.
 West North Central—Iowa, Missouri, Nebraska, Kansas.
 South Atlantic—Virginia, West Virginia, North Carolina, S. Carolina, Georgia, Florida.
 East South Central—Kentucky, Tennessee, Alabama.
 West South Central—Arkansas, Louisiana, Texas.
 Mountain—Montana, Colorado.
 Pacific—California.

It is a familiar fact that certain communicable diseases are more prevalent in the North than in the South and others vice-versa. The average death rates per 100,000 population given in the table on page 79 have been rearranged in the preceding table to bring out any differences that exist in the mortality from these 5 diseases in the 9 geographic divisions of the country. Scarlet fever and diphtheria are shown to be more serious in the North but typhoid mortality is small compared to rates in the South. Whooping cough is highest in New England, and the South Atlantic states are a close second. The situation is reversed for measles, and the Middle Atlantic states are slightly ahead of the New England states.

USE MADE OF COMMUNICABLE DISEASE REPORTS

The frequent answer of the busy physician to the plea of the health officer for prompter and more complete reporting of communicable diseases is that nothing is done about them when they are reported. It is the duty of the health officer to prove to the contrary. Adequate action is not limited to placarding or epidemiological, nursing, hospitalization or release visits. As chief of staff of the organized forces to combat the spread of communicable disease the health officer should have his facts so analyzed and so marshalled that he knows the exact status of the enemy at any moment. This is made easy and graphic by the use of charts, spot maps and tables which are kept up to date. The practices of the health officers in respect to a number of such procedures were called for in the survey schedule and are tabulated for the 86 cities as follows:

	Yes	No	No Record
Spot Map Kept	42	44	0
Weekly Chart	41	45	0
Up to Date	37	48	1
Chart of Occurrence on Milk Route	16	70	0
Data readily available	52	31	3
Records arranged by districts	25	60	1
Records arranged in chronol. order	73	13	0
Records arranged by disease	26	52	8
Inf. on dis. sit. readily available	79	7	0

Less than half of the cities report that spot maps or weekly charts are kept and not all of these were kept up to date. Sixteen cities chart the occurrence of diseases which may be milk-borne according

to the milk routes, though 52 cities claimed the information was readily available. Records were arranged by districts in 25 cities, by disease only in 26 cities and in chronological order of occurrence in 73 cities. However, all but 7 cities claimed that information on the disease situation was readily available.

COMMUNICABLE DISEASE HOSPITALIZATION

Provisions for hospitalizing communicable disease vary widely from local hospitals for the exclusive use of such patients, observed in 21 cities, to no provisions whatsoever, so far as could be learned, in 18 cities. Special communicable disease beds in wards of general hospitals were recorded in 16 cities; 11 cities used county communicable disease hospitals, and 4 cities reported that they were dependent on hospitals in other cities. Smallpox hospitals, formerly referred to as "pest houses," were found in 19 cities, in 4 of which, however, ward beds in the general hospital were available for communicable disease patients. One city reported the use of both a county hospital and a special hospital in another city. For 2 cities the information was lacking.

No effort was made to determine the cost of hospitalization, although the 10 cities for which both the annual cost and the number of beds in special communicable disease hospitals were easily obtainable, reveal that 407 beds cost in maintenance \$102,459, or an average cost per bed, per year, of \$251.75. One city, Holyoke, is spending \$27,800 on a 20 bed hospital. The wide extremes suggest the desirability of a thorough study of the cost of communicable disease hospitalization.

THE APPRAISAL OF COMMUNICABLE DISEASE CONTROL

The appraisal of communicable disease control by means of the Appraisal Form permits of a comparison between the 86 cities which is graphically presented in chart 12 facing the beginning of this chapter. The first impression that is gained is the comparatively poor showing of the cities in the upper third. The best rating is 77 per cent of the maximum score, while the median score is 42 per cent.

The ratings of the cities are given on page 83 by groups as well as for the cities as a whole for the four sub-sections of the Appraisal Form devoted to communicable disease control. These ratings will come as a surprise, no doubt, to those who recognizing that this is one

of the oldest and most thoroughly established of the branches of public health work, would expect it to rate high. It ranks eighth among the 11 major public health activities. That it does not rank higher may be due either to the fact that the Appraisal Form has not wisely selected representative criteria or that the standards adopted are too severe. On the other hand, it may represent the true state of application of some 23 typical procedures in the control of communicable disease. Opinions will differ as to which explanation is the true one. A detailed analysis of each item would go far toward determining this question.

	No. of items	Max. Possible Score	Average Score in Per Cent of Total Possible Score					
			All Cities	Upper Third	Middle Third	Lower Third	Maxi- mum	Mini- mum
Reporting	5	20	65	93	73	26	100	0
Record Keeping	7	20	44	75	41	14	100	5
Control Practices	8	90	44	66	42	23	88	5
Spec. Prev. Meas.	3	45	32	61	29	3	100	0
Total	23	175	43	63	42	25	77	5

It is interesting to note that while the cities score highest in reporting they score lowest in those specific preventive measures, small-pox vaccination and diphtheria immunization, upon which we really can rely as being effective. In these activities the 86 cities score but 32 per cent of a full score, while the upper and lower thirds attain 61 per cent and 3 per cent, respectively. Record keeping and other control practices fall midway between the measures mentioned above, with 44 per cent of a full score.

Personal observation of the administration of control practices and specific preventive measures, however, seems to indicate that cities of this size are putting into practice but a small part of our present day knowledge of communicable disease control, and that the rating in this item probably presents a true picture of the condition which exists.

THE APPRAISAL FORM FOR COMMUNICABLE DISEASE CONTROL

There are reproduced below the items and values tentatively adopted as described elsewhere for appraising communicable disease control. Alternative standards and values are given in certain instances for cities under 100,000 population and for cities over 100,000 population.

COMMUNICABLE DISEASES (Total Points 175)

Reporting (20)

Standard: Cases Reported per Death

		Value of Item
a. Typhoid	10 cases per death	4
b. Diphtheria	15 cases per death	4
c. Scarlet Fever	50 cases per death	4
d. Measles	100 cases per death	4
e. Whooping-cough	25 cases per death	4

Record Keeping (20)

- a. Filing of Case Records by:
 - i. If simple day-book of communicable diseases unclassified;—score 2 points; or,
 - ii. If ledger or card-file of diseases chronologically by disease;—score 6 points; or,
 - iii. If ledger or card-file with disease incidence is correlated with other epidemiological information, such as milk dealers, schools, etc.,—score 10 points.

Maximum score 10
- b. Spot Map of Cases
Spot map of any three communicable diseases 4
- c. Chronological Charts of Cases
 - i. Scarlet Fever 2
 - ii. Diphtheria 2
 - iii. Any other two diseases 2

*Control Practices (90)**Diphtheria Control*

	For cities with pop. less than 100,000	For cities with pop. over 100,000
a. All known (immediate family) contacts cultured	5	2
b. If 50 per cent of all susceptible contacts are either passively or actively immunized	5	2
c. Cases released on cultures	5	2

Typhoid Control

All cases released from isolation only after negative cultures	5	3
--	---	---

Smallpox Control

All known susceptible contacts vaccinated or isolated	8	5
---	---	---

Scarlet Fever Control

Child contacts controlled 7 days	5	5
----------------------------------	---	---

Visits by Doctors and Nurses

Visits to Cases.

Combined total of cases of diphtheria, scarlet fever, typhoid, measles, whooping-cough receiving an average of 4 visits per case by health department officials

50 26

Less than 100,000 Population		Over 100,000 Population	
Visits per Case	4 50 Points	Visits per Case	4 26 Points
	3 40		3 20
	2 25		2 15
	1 10		1 10

Diagnostic Service

If the health department maintains a consulting diagnostic service for use by physicians

7 5

Standard: 50 Calls per 100,000 Population

Less than 100,000 Population		Over 100,000 Population	
Calls	50 7 Points	Calls	50 5 Points
	0 0		0 0

Hospitalization (40)

Per cent of cases hospitalized

Typhoid	Per Cent	40	..	10
Diphtheria		25	..	10
Scarlet Fever		25	..	10
Smallpox		100	..	10

*Specific Preventive Measures (45)**a. Diphtheria (30)*

Total number actively immunized against diphtheria in last 12 months equal to 90 per cent of births

20

Per Cent	100	20 Points
	90	15
	70	10
	40	5

If 25 per cent of those immunized are under six years of age, add 5 points; if 50 per cent or more, add 5 points additional

b. Smallpox

Per cent of school children of the first grade (or 3 per cent of total population) annually vaccinated against smallpox

15

Per Cent	100	15 Points	Per Cent	3	15 Points
	70	0		0	0

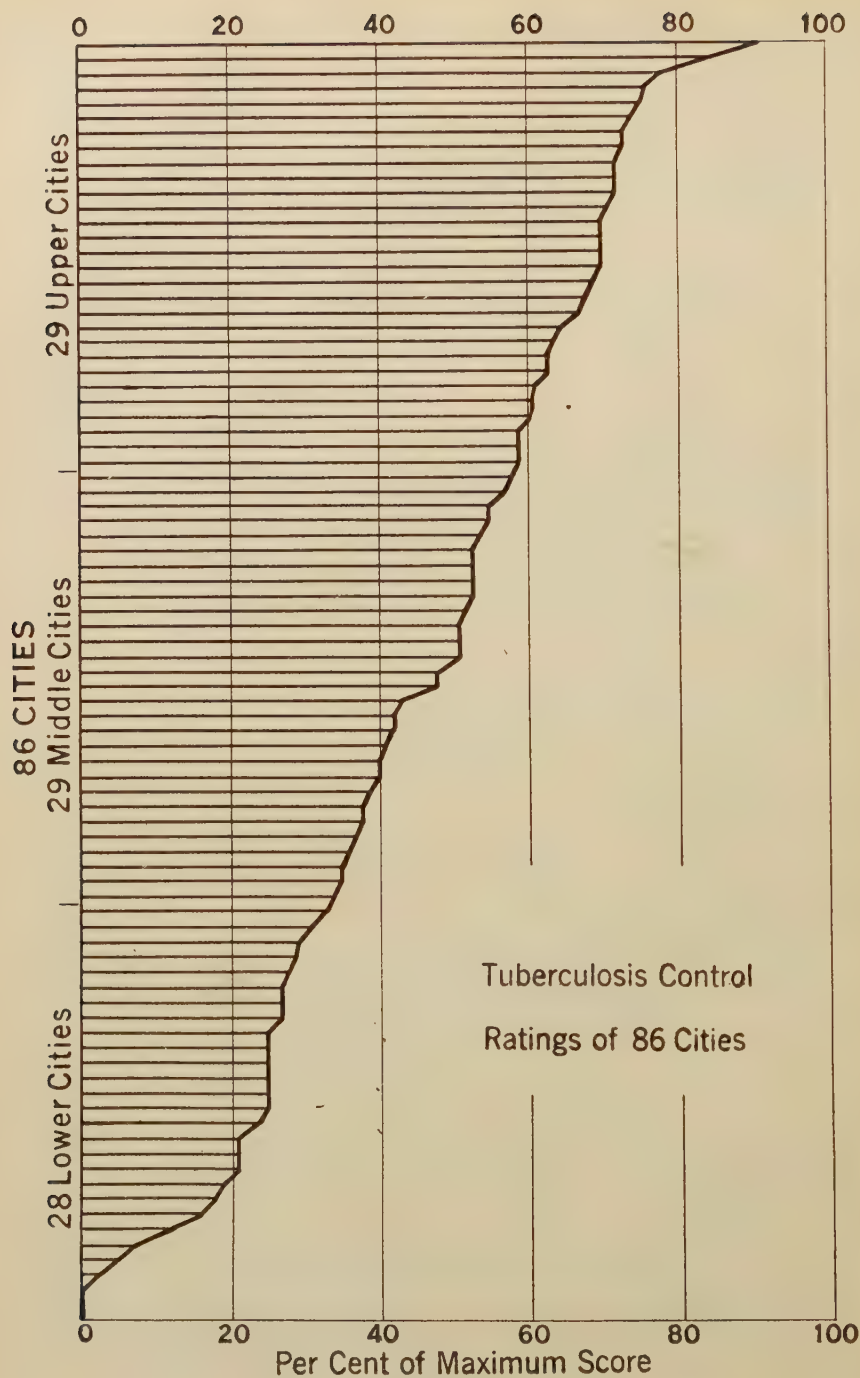


CHART 13

CHAPTER V

TUBERCULOSIS CONTROL

Tuberculosis is the most serious of the communicable diseases. It infects the great majority of the people. It kills a larger number than any other disease, with the exceptions only of organic disease of the heart and pneumonia. Its economic cost to the individual, the family and the community is appalling. Twenty years of struggle have done much to educate the public regarding the prevention and cure of tuberculosis. The organized fight against tuberculosis is a movement of such magnitude that, together with many other factors, it must be held in considerable measure responsible for the great reduction in tuberculosis during this period. In spite of the large amount of individual information which is current in the country at the present time, it is distressing to realize that the importance of tuberculosis as a community problem requiring the best efforts of the health department is still very inadequately realized. The Report on Municipal Health Department Practice of the American Public Health Association showed that in 1920, of the 83 cities with populations over 100,000, only 46 possessed municipal health department tuberculosis clinics, and only 29 cities had appropriated money specifically for tuberculosis.

The mortality rates from tuberculosis tell their own story. The average tuberculosis death rate per 100,000 population for 1922, according to the United States Census figures, for the 81 of the 86 cities

Rate per 100,000	U. S. Census 1921 No. of Cities	U. S. Census 1922 No. of Cities	A. C. H. A. 1923 No. of Cities
Less than 50	16	13	20
50 to 99	36	40	41
100 " 149	23	21	9
150 " 199	3	4	4
200 " 249	1	1	2
250 " 299	1	2	0
	<hr/> 80	<hr/> 81	<hr/> 76

in this survey which are in the registration area for deaths, was 91.1. For 1921 it was 92.5. The rate for 1923 was obtainable at the time of writing only from the reports secured locally by the surveyors and cannot be considered official.

A distribution of the rates into significant divisions as presented in the preceding table supplies additional information which is not revealed in the average rate. The tuberculosis death rates are given for all forms for the years 1921, 1922 and 1923.

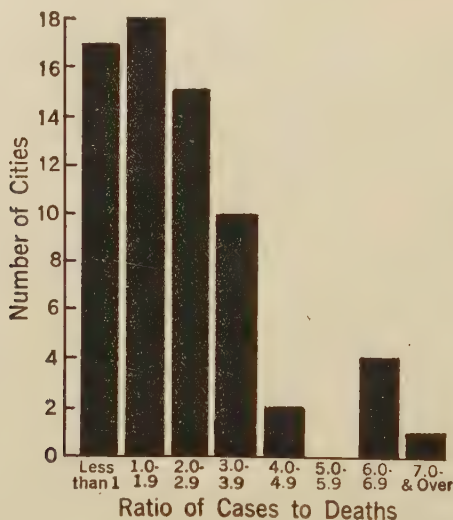


CHART 14

It is interesting to note that the tuberculosis death rates for all registration cities in the country for 1921 and 1922 were 99.4 and 97.0, considerably higher than the average rates for the surveyed cities.

REPORTING OF NEW CASES

The number of cases of tuberculosis reported in 1923 in the 67 cities where the information was obtainable was 1.6 per annual death. Seventeen cities which report both cases and deaths show more deaths than cases. It is evident that the reporting of tuberculosis cases is far from complete. Chart 14 presents graphically the ratio of new cases reported to the deaths occurring in 1923, for the 67 cities reporting this information. In 19 cities the information was unobtainable or lacking.

A certain number of the deaths properly chargeable to these cities are not included because the deaths occurring among local residents in state or county tuberculosis sanatoria have not been added. The fact that these deaths are not included results in increasing the ratio of cases to deaths. The 5 highest ratios in the table are due to particularly striking instances of this kind.

CLINICS

One or more tuberculosis clinics were found in operation in 71 of the 86 cities. In 3 additional cities the general medical clinic of the hospital performed with its other work the rôle of a tuberculosis clinic. In 12 cities no clinics were maintained.

AGENCIES MAINTAINING CLINICS

Responsibility for the operation of the clinics rests with a variety of sources, private agencies leading with 43 per cent and official agencies following with full responsibility for 28 per cent of the clinics. The distribution of responsibility is as follows:

	No. of Cities
State	9
County	2
Municipality	21
Private Organizations	32
State and Municipality	2
State and Private Organizations	1
County and Private Organizations	1
Municipality and Private Organizations	4
State, Municipality and Private Organizations	1
County, Municipality and Private Organizations	1
No Clinic	12
	<hr/>
	86

FREQUENCY OF CLINICS

The frequency of clinics a week is indicated in Chart 15 and shows that few cities conduct more than 2 clinics or less than 1 clinic a week.

HOURS OF PROFESSIONAL SERVICE IN CLINIC

The hours devoted by physicians to the tuberculosis clinics in the 74 cities maintaining a tuberculosis diagnostic service are shown in Chart 16.

Seldom do the physician-hours at a single clinic vary from the usual 1 to 2 hours. Where a large number of hours are reported the presence of 2 or more clinics is indicated.

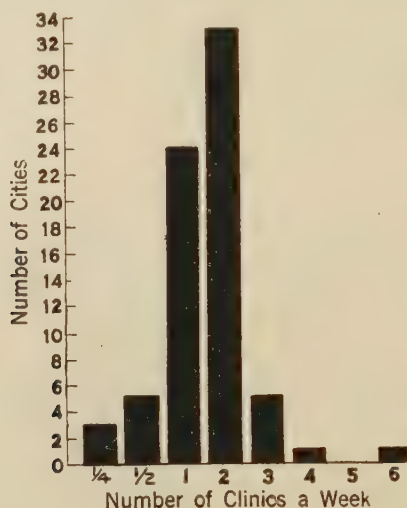


CHART 15

REGISTRATION OF NEW PATIENTS

In spite of the fact that tuberculosis was one of the first diseases to arouse public interest and provoke definite combative efforts at the

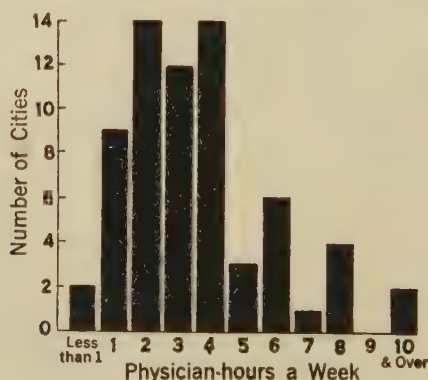


CHART 16

hands of private and public agencies, the activity of tuberculosis clinics in securing new patients seems to be much less than might be expected. Of course, in those cities of more fortunate economic

status the number of people served by private physicians is greater and consequently the number enrolled at public clinics would be proportionately less. A moderate estimate of the total number of cases of active tuberculosis which should be known to exist in the average city varies from 5 to 9 per annual death. As the tuberculosis death rate for the 81 cities reporting was 91 per 100,000 population in 1922, the number of expected cases would average from 455 to 819. Yet the average number of new patients enrolled at the clinics in 1923 (and many of these must have been diagnosed as non-tuberculous) for the 52 cities reporting was only 194. It must be remembered that the 455 to 819 cases represent an estimate of the total cases under the care of both private physicians and clinics, while 194 represents only the new cases reported at the clinic in a given year. Of course the number of cases reported to the health department for the first time in a given year is another question. This was only 1.6 cases per death in 1922, or an average of 146 cases per 100,000.

The following table presents the facts in regard to the registration of new patients at clinics, per 100,000 population, for 55 cities which reported this information. In 12 cities no clinics were held and in 19 cities the information was unobtainable or lacking.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	19	374	758	179
Middle Third	18	134	179	94
Lower Third	18	48	86	7
Entire Group	55	189	758	7

Cities in Upper Third:—Passaic, Pueblo, Racine, Huntington, Perth Amboy, Atlantic City, Topeka, Butte, San José, Lexington, Hoboken, Bay City, Cicero, East Orange, New Britain, Haverhill, Rockford, Brockton, Bethlehem and Lincoln.

TOTAL REGISTRATION

The total registration of both new and old cases at the clinics of 62 cities averaged 601, the upper third of cities averaging 1,179 per

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	21	1,179	2,620	644
Middle Third	21	432	600	294
Lower Third	20	173	284	46
Entire Group	62	601	2,620	46

Cities in Upper Third: Lexington, Sacramento, Quincy, Butte, East Orange, Atlantic City, Portsmouth, Charlotte, Pueblo, Perth Amboy, New Britain, Decatur, Springfield, Ill., San José, Hamtramck, Topeka, Hoboken, Passaic, Haverhill, New Castle and Berkeley.

100,000 population. These data are presented in the usual manner in the preceding table. While it is impossible to state the figure for attendance during the year it is of interest to note that the average attendance at 56 tuberculosis clinics in 1920 as reported in the survey of the 83 larger cities was 2,228. In 34 cities the enrollment was given in terms of adults and children and shows a proportion of 1.62 adults to each child registered.

FIELD NURSING SERVICE

HOURS OF NURSING SERVICE

The time devoted to field nursing was requested in the schedule but specific answers were obtainable in only 51 cities. These answers may be most simply expressed in terms of the number of nurse-hours a day.

Cities Reporting	Nurse Hours a Day
1	24
3	16
2	12
29	8
6	6
3	4
3	2
4	1

In other words, the most common experience or that found in 29 cities was 8 hours of nursing a day. This means that a full-time tuberculosis nurse was employed in these cities. Only 6 cities employed more than one full-time tuberculosis nurse, and 16 cities employed fewer than that.

NURSING VISITS

Seventy-six cities have some provision for nursing follow-up of tuberculosis in the home. In 24 of these, there is home nursing of the sick, while in 52 home work is limited to instruction only. Ten cities have no home nursing service.

The number of field visits made by nurses in behalf of their tuberculosis patients is one valuable index of the extent of the tuberculosis service which has been developed in a city. These visits represent, of course, a great variety of services. Visits to patients, to contacts, to laboratories, to hospitals, to physicians, to social agencies, to employers, and, in fact, any service in the behalf of a patient or suspected patient should be considered as a nurse's visit. The number of visits of this character are presented in the table below. As the total number of tuberculosis cases and contacts are not known in each city the data have been presented on a comparable basis of visits per 100,000 population for the 60 cities in which information was obtainable. If the figures are halved they will represent approximately the actual number of visits made.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	20	4,491	7,050	2,970
Middle Third	20	2,032	2,905	1,298
Lower Third	20	748	1,218	78
Entire Group	60	2,483	7,050	78

Cities in Upper Third:—Decatur, Little Rock, Portsmouth, Sacramento, Pawtucket, Charlotte, Mt. Vernon, Haverhill, New Britain, Saginaw, San Jose, Butte, Winston-Salem, Perth Amboy, Malden, Everett, Augusta, Lancaster, Fitchburg and Hoboken.

HOSPITALIZATION

IN LOCAL HOSPITALS

The extent of hospitalization of tuberculosis patients was considered in the survey and an effort was made to determine the number that were hospitalized in state as well as in local institutions. The reported number is not large. Forty-one of the 69 cities replying stated that no patients were hospitalized locally. In 20 instances the hospitals were known as local county hospitals or county and state hospitals located close to the city and the individuals reported as receiving treatment were undoubtedly local cases only. In these local or semi-local hospitals in the 28 cities reporting beds available for tuberculosis patients, the ratio of the number of patients per bed in 1923, is 1.7.

HEALTH SURVEY OF 86 CITIES

The following table gives the information in regard to local hospitals on a basis of patients per 100,000 population, 69 cities reporting.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	23	167	890	66
Middle Third	23	10	65	0
Lower Third	23	0	0	0
Entire Group	69	59	890	0

Cities in Upper Third:—Springfield, Ill., Chattanooga, Lexington, Shreveport, Winston-Salem, Decatur, Rockford, Kenosha, Charleston, Atlantic City, Niagara Falls, Montgomery, Elmira, Quincy, Fitchburg, Haverhill, Kalamazoo, Lansing, Salem, Berkeley, Mobile, Pittsfield, and Holyoke.

The upper group of 23 cities averaged 167 patients which is in the ratio of almost 2 patients per death.

IN STATE HOSPITALS

In regard to state provisions for hospitalization, 62 cities reported such provisions as available although only 41 reported having availed themselves of these beds. Of the remaining 24 cities, 4 made no report and 20 claimed no state provisions. The hospitalization of tuberculosis patients in state tuberculosis hospitals or sanatoria is given below for the 62 cities reporting.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	21	81	178	52
Middle Third	21	28	50	0
Lower Third	20	0	0	0
Entire Group	62	33	178	0

Cities in Upper Third:—Sacramento, McKeesport, New Britain, Bethlehem, Johnstown, Woonsocket, Perth Amboy, Pawtucket, Springfield, Mo., Pittsfield, East Orange, Portsmouth, Berkeley, Malden, Chelsea, Everett, New Castle, Fitchburg, Binghamton, Portland and Davenport.

IN ALL HOSPITALS

The total number of individuals hospitalized per 100,000 population whether in local, county or state institutions, is given as reported in the following table. No records whatsoever were obtainable in 19 cities. In the remaining 67, five cities reported no patients as being hospitalized.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	23	218	890	106
Middle Third	22	78	106	50
Lower Third	22	24	50	0
Entire Group	67	140	890	0

Cities in Upper Third:—Springfield, Ill., Kenosha, Chattanooga, Lexington, Shreveport, New Britain, Winston-Salem, Decatur, Sacramento, Rockford, McKeesport, Pittsfield, Berkeley, Fitchburg, Johnstown, Atlantic City, Charleston, Niagara Falls, Cicero, Haverhill, Holyoke, Bethlehem and Montgomery.

The ratio of adults hospitalized to the children hospitalized for the 37 of the above 67 cities which gave their reports by the two age groups was practically 4 to 1.

PREVENTORIA, SUMMER CAMPS AND OPEN AIR SCHOOLROOMS

There were no local preventoria specially maintained for incipient tuberculosis, though a few cities reported that the local hospitals endeavored to emphasize this preventive aspect in their selection of children.

Summer camps for undernourished and pre-tuberculous children were found to be well organized in 7 cities, an average of 60 children being given special care for 6 weeks to 2 months.

Open-air schoolrooms with provisions for rest in 20 cities, provisions for food in 19 and for extra wraps in 17, were also found.

On the whole, however, the lack of early preventive measures for the incipient tuberculous child or adult was very evident.

THE APPRAISAL OF TUBERCULOSIS CONTROL

The appraisal of the tuberculosis activities of the 86 cities on the basis of the five criteria adopted in the rating schedule is to be found graphically represented in Chart 13. The picture presented by this chart reveals a range of scores between 91 and 0 per cent. Two cities scored over 80 and 10 less than 20 per cent. The scores decline rather uniformly between these limits. The tuberculosis chart of city ratings is similar in contour to the vital statistics chart. There are few cities with very high scores and few with very low. In this respect the tuberculosis chart is not unlike those for communicable disease control, pre-natal hygiene, school child hygiene, and sanitation.

Analyzed by groups composed of the upper, middle and lower third of cities, on the basis of their scores for tuberculosis, the upper third has an average of 69 per cent of a perfect score, the middle third 46 per cent, the lower third 20 per cent, while the score for all 86 cities is 45 per cent.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	69	91	59
Middle Third	29	46	58	34
Lower Third	28	20	33	0
Entire Group	86	45	91	0

THE APPRAISAL FORM FOR TUBERCULOSIS CONTROL

Below are reproduced the items and values tentatively adopted as described elsewhere for appraising tuberculosis control.

TUBERCULOSIS CONTROL (Total Points 100)

	Value of item
<i>Reporting Ratios</i>	15
Standard: 5 Active Cases (of all forms) on record last year, per death last year	
Cases per death 5	15 points
4	12
3	6
2	3
1	0

Fractions of Ratios may be prorated.

Field Nursing Service

Number of Home visits by nurse in behalf of tuberculous cases	30
Standard: 4,000 Visits per 100,000 Population	
Visits 4,000	30 Points
0	0

Clinical Service

Number of Clinic Visits	15
Standard: 5,000 Visits per 100,000 Population	
Visits 5,000	15 Points
1,000	0

TUBERCULOSIS CONTROL

97

Hospitalization

25

Standard: Patient days per 100,000 Population

Cities of 50,000 or less.	Patient Days 7,000	25 points
Cities of 50,000 or less.	0	0
Cities of 50,000-100,000.	Patient Days 14,000	25 points
Cities of 50,000-100,000.	0	0
Cities of 100,000 and over.	Patient Days 21,000	25 points
Cities of 100,000 and over.	0	0

Open Air Rooms, Classes, Preventoria, or Day Camps

Number of children attending at least six weeks

15

Standard: 10 Children per 1,000 Grade School

Population (public and private)

Children	10	15 points
	2	3

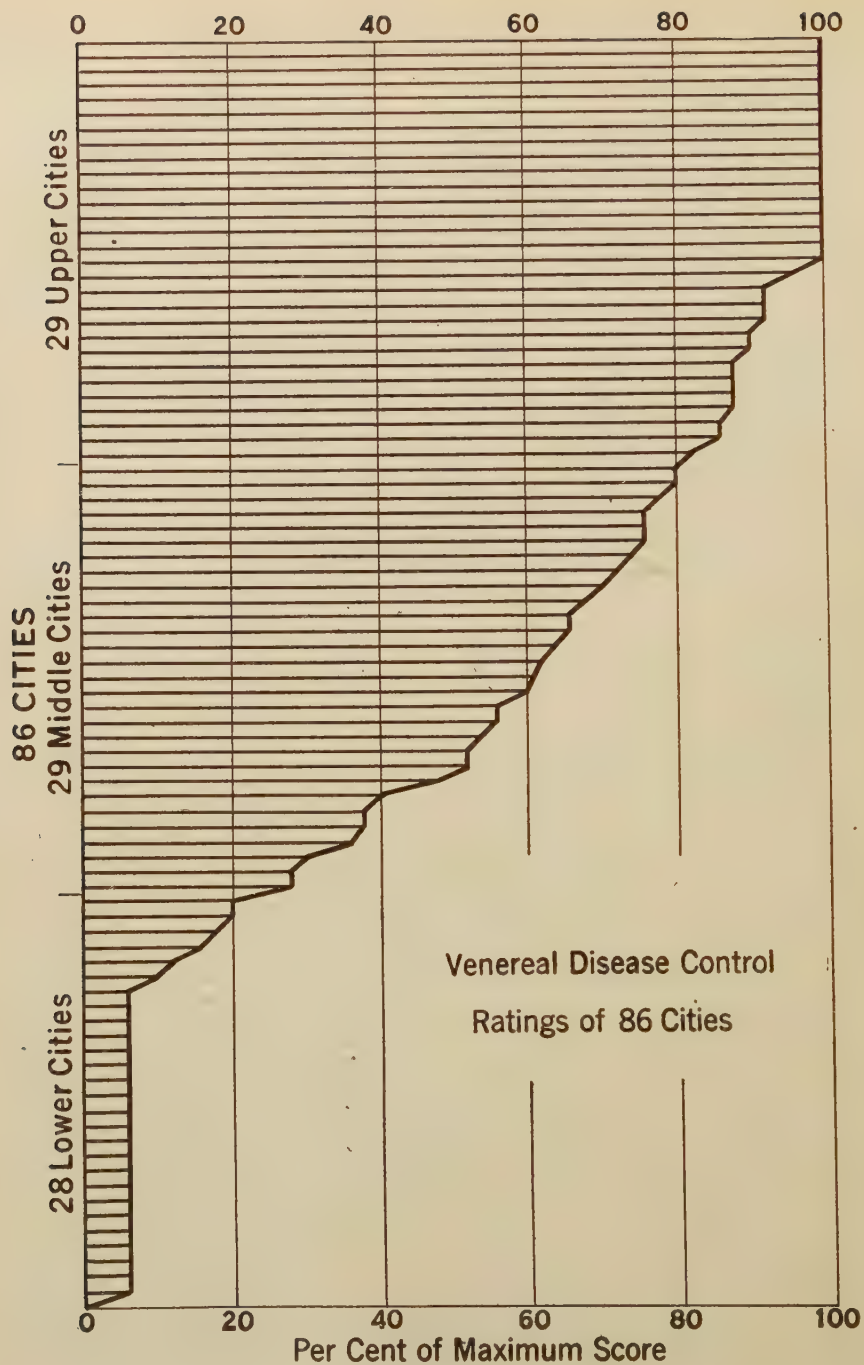


CHART 17

CHAPTER VI

VENEREAL DISEASE CONTROL

This problem in public health administration is so complicated and so interwoven with social and moral questions, that an introductory statement seems advisable in explanation of the basis chosen for the study and for the use of the Appraisal Form in the field. It was recognized that the limitations of the study precluded any comprehensive study of venereal disease control measures, but it was considered that the recording of a few important data for each of the cities might serve as a basis for comparison and as a stimulus to the subsequent assembling of additional information which would confirm this basis or explain wherein it was erroneous.

The clinic was finally selected as the most constant factor in the cities to be studied. Furthermore it was possible to use certain figures from general clinic experience as a norm, so to speak, for the population of each city. Reporting of the venereal diseases is as yet too irregular or incomplete for purposes of comparison in reporting this study, but shows encouraging progress when the difficulties of the problem are considered. Eventually the proper reporting of cases will be worked out with adequate protection of patients, and this item has been included in the three proposed for the Appraisal Form. Similarly reports on laboratory diagnostic aid in these cities could not be used for the purposes of the study, but show evidence of real progress in building up a program for combating these diseases.

The private physician is assumed to be the largest potential factor in the early diagnosis, treatment, and follow-up of venereal disease cases, but no way could be devised to collect data from this group in the time available. It is expected that the tactful, persistent promotion of notification of these diseases will open the way to this source of information. Health officials are also giving careful study to ways and means of securing and properly utilizing, for the welfare of individuals and of the community, information from the nursing groups, social service workers, industrial groups, like insurance companies and other agencies. Most encouraging progress has been made

in this direction in relation to ophthalmia neonatorum, and in lesser degree along other lines of protecting children from infections.

The following data with brief comments are submitted to show that the venereal diseases, which take such frightful toll of human lives and efficiency and constitute such a menace to child life, are being recognized to some extent by the cities studied. If all cities of every size can be interested in a friendly, frank study of their activities and comparison of results with all the other cities, it is believed more effective work and more rapid extension of facilities will follow.

REPORTING

The reporting of the venereal diseases to the local department of health is required in 56 cities. The fact that the health officers of so large a proportion of the 86 cities of this size have access to the information available in case reports is perhaps the most important consideration in reference to the administration of venereal disease control measures in this group of smaller cities.

Figures showing the number of cases reported in the 56 cities were not obtained in the survey. Interpreted merely as indicators of the prevalence of the venereal diseases, case reports, as yet, do not begin to show how widespread these infections are. The number of cases of the venereal diseases reported has nowhere reached or even approached the minimum number of infections which the experts agree would be found in communities where the prevalence of these diseases is low. The value of case reporting lies in the fact that through case reports which are obtained, health officers have direct confidential access to information of the greatest importance to them in planning their efforts to control the venereal diseases. Case reports enable the health officer to locate and eliminate foci of infection. Of very great value to the health officer also is the contact with the private physician that the requirement of case reporting gives. Such contact, properly developed, may be a means of securing the cooperation of physicians in carrying on a complete program of venereal disease control for the community.

Reporting of cases is one of the three items included in the proposed Appraisal Form for City Health Work. Because, as stated above, information about the number of venereal disease cases reported was not obtained in the survey, this item is not covered in the rating of cities presented in this report.

CONTROL MEASURES

Efforts to control the venereal diseases are in the majority of the cities centered in a venereal disease clinic. In 65 cities such clinics are in operation. The reports show that some cities carry on other activities in their efforts to control these diseases. In only 19 cities, are other measures besides treatment maintained. Little information concerning these activities could be obtained in the survey. That they are maintained by a scattered group of agencies is indicated in the following table:

	Number of Cities
Police Department	9
Hospitals	3
Social Service Bureau	3
Juvenile Court	2
American Red Cross	1
School Nurse	1
Children's Aid Society	1
Industrial Plant	1
Miners	1

In the 21 cities which have no venereal disease clinic other activities directed toward the control of these diseases are not reported. In not one of the 21 cities is there the requirement of reporting cases directly to the health officer. It is undoubtedly significant that the health officers of these cities have not been receiving routine information about the cases occurring in their respective communities. However, it should not be overlooked that there may be circumstances making the establishment of a clinic unnecessary. Several of the cities without clinics are near large cities, where treatment facilities are provided.

Eleven cities reported hospitalization of venereal disease cases. The number of individuals hospitalized in 1923 was 151.

The activities of the laboratories in many of the 86 cities are so poorly organized that it was found impossible to secure data which would be of value in describing them for the group as a whole. The provision of laboratory facilities available to both physicians and clinics is an important feature of a venereal disease program. The operation of the laboratory should be on the highest plane, with the service so organized and administered that reports will be made promptly and contain trustworthy information.

In the chapter on maternity hygiene, it is shown that an average of only 48 mothers out of a thousand have clinical supervision during the pre-natal period. If the mothers under supervision by nurses in the home are included, as well as those under clinical supervision, the proportion is raised to 140 out of a thousand. This of course does not include those cases which are under the supervision of their private physician.

Thus, the organization for preventing a great deal of family damage through syphilitic infections is already established. The interest of the child is supreme in this matter and it should be the aim of every community to so plan its program for the control of venereal disease and for maternity hygiene that all pregnant women shall receive a careful, thorough examination in the early months of pregnancy. This examination should include not only pelvic measurements, urinalysis, and blood pressure tests, but also a Wasserman blood test. Provision should also be made for painstaking instruction of the nurses responsible for the pre-natal service in the importance of early and adequate treatment. Here is offered a golden opportunity for preventing the congenital transmission of syphilis and the opportunity should be seized with eagerness.

In connection with this discussion of pre-natal care, it is interesting to note that all of the cities require treatment of babies' eyes with prophylactic silver solutions. Measures for preventing ophthalmia neonatorum are described in Chapter VII as follows:

"Of the 31 states represented in this survey, there is not one but has a law requiring the reporting of cases of Ophthalmia Neonatorum to the Health Department. In 19 of these states the health officer is empowered and required to secure adequate attention for uncared-for cases. There are, however, but 17 states that have laid down the specific requirement that each physician and midwife, or other attendant at birth, shall treat the eyes of the new-born with prophylactic silver. The cities in most instances have filled this gap for only three of the 86 cities report the absence of such a requirement.

"Even though all the states have made reporting a requirement, 32 cities had no record of the cases which had occurred during 1923; 23 cities reported a total of 128 cases. One city, Brockton, reported 108 cases of babies with sore eyes under treatment, 33 of which proved to be ophthalmia. Deducting this rather unusual number of cases, the average for 22 cities is four cases, or a rate of eight per 1,000 population."

This requirement of prophylactic treatment although more of a means for preventing damage than for checking the spread of venereal diseases is one of the items included in the rating form used for the present survey. All the cities secured a perfect score in this item.

Proper supervision of dance halls, commercial recreation, theaters, and motion picture houses is an important step toward preventing vice and the spread of venereal disease. On this point the following comments may be quoted from Chapter XV on Recreation:

“Supervision over these forms of entertainment is not uniformly practiced. Forty-one of the 86 cities censor motion pictures or permit only those which have been censored. Fifty-three cities having dance hall supervisors have placed them under the police department, with one exception, where it is a responsibility of the Community Service.”

Study of law enforcement measures against commercialized prostitution was not undertaken in the present survey.

CLINICS

BY WHOM OPERATED

In the 65 communities which have venereal disease clinics the responsibility for operating them is divided among six different types of agencies. In 22 cities, or about 25 per cent of those surveyed, the municipality has assumed the entire responsibility for maintaining the clinic. In nine more cities, the municipality joins with some other agency in clinic maintenance. Thus, in 31 cities, or nearly half of

	Number of Cities
Municipality	22
Municipality and County	1
Municipality and State	2
Municipality and Private Organization	2
Municipality County and State	3
Municipality State and U. S. Public Health Service	1
County	1
State	16
United States Public Health Service	2
Private Organizations	4
County and State	1
State and U. S. Public Health Service	1
State and Private Organization	9
Total	<hr/> 65

all the cities which have clinics, the municipal health department is providing treatment facilities. The preceding table summarizes the agencies operating clinics.

CLINIC SESSIONS

Some measure of the amount of service provided in these clinics is given in Chart 18, showing the number of clinic sessions per week. Where clinics are open at a number of different times, many more patients will find convenient hours to attend. Also, where several sessions a week are held, there is better opportunity for giving more intensive courses of treatment than if fewer sessions are held.

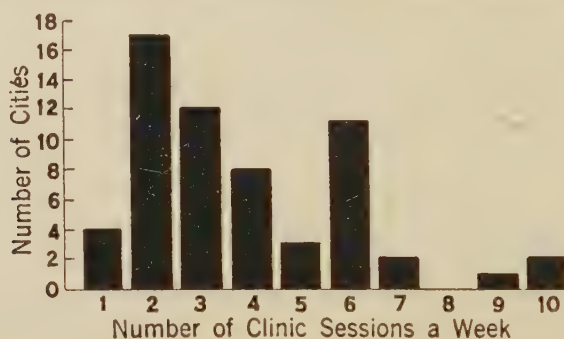


CHART 18

The number of sessions of the clinics held a week varies from one to ten. In 19 or approximately the upper third of the 60 cities surveyed, five or more sessions are held; in the middle third, three or four sessions are reported and in the lower third, only one or two. In addition, five cities report clinic services, but not the definite number of clinic sessions a week.

There is no record in the survey as to whether night sessions were provided. Such provision is desirable to permit employed men and women to secure adequate treatment outside of working hours.

CLINIC PERSONNEL

The attendance of physicians is another important measure of the adequacy of clinic services. The distribution of actual hours of physician attendance is shown in Chart 19.

Comparisons between cities in respect to this measure of adequacy are more fairly made when the number of hours physicians attend

is stated as a ratio per 100,000 population. Expressed in these ratio terms, this measure is one of the four items on which venereal disease control services have been rated in the present appraisal of city health work.

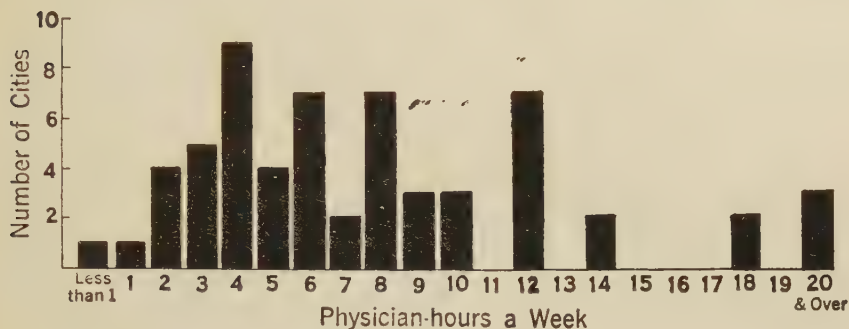


CHART 19

The number of patient-visits a physician-hour varies between rather wide limits. The average for 48 cities reporting is 6.4 patients. Several cities report as few as two patients a physician-hour.

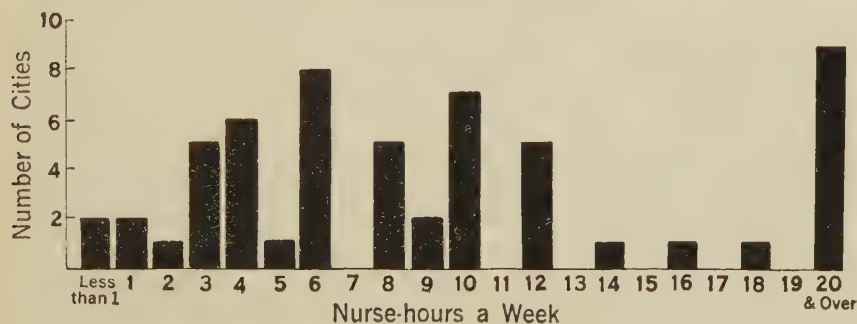


CHART 20

In this connection it is interesting to compare the hours of attendance of nurses, as shown in Chart 20 above. Only twelve cities reported other personnel in the clinic.

SOCIAL SERVICE FOLLOW-UP

Whether social service follow-up is included among the duties of nurses or other personnel was not determined in the survey. It

has been demonstrated that no clinic caring for venereal disease patients can operate to the best advantage without this service.

WHO PAYS FOR SERVICE

Fifty-seven out of 65 cities report that free treatment is available. Thirty-two cities report a portion of the treatments are paid for.

USE OF TREATMENT FACILITIES

A measure of the success of efforts to educate the public on the importance of controlling the venereal diseases is the use made of treatment facilities. In the survey, reports were obtained as to number of patients registered, total attendance, and treatments for gonorrhea and syphilis in the venereal disease clinics. The reports obtained, expressed in ratios per 100,000, are summarized on page 107. The variation in the form of this table from those used in presenting other subjects has been made in order to bring together the clinical facts in as concise a manner as possible. It may be noted that of the 48 cities reporting the number of new patients registered about 25 differentiated between adults and children. For these cities, the ratio of adults to children was 17 to 1. The maximum ratio was 232 to 1 and the minimum 3.2 to 1.

Two of the items given in this table, new patients registered and total attendance, are included as items in the scale used in this report for scoring the venereal disease control measures of cities. Attendance or clinic visits is one of the three items of the proposed Appraisal Form. It is interesting to compare these reports of actual services as tabulated on page 107, with the standards designated in the rating scales. The figures selected as a standard for the highest score for new patients registered is 250 per 100,000 population. This proposed score is a little lower than the average score in the middle group of cities. The standard for attendance (clinic visits) used in the present study and proposed for the appraisal form, is 5,000 per 100,000 population. This is a little higher than the minimum report recorded in the survey for the upper third of cities. These comparisons suggest that in such cities as have clinics a somewhat better use is made of clinic facilities than it was anticipated would be the case.

An important use of this table may be made in directly comparing any given city as to use of clinic facilities with the cities of the group

surveyed. For example, if 350 new patients per 100,000 population were registered during the past year in any given city, that city stands just a little lower than the maximum of the middle third of the survey cities, and considerably higher than the average of the middle third. Similar comparisons may be made with respect to total attendance and number of treatments given. It should be noted that in making such comparisons the figures considered must cover the services in all of the clinics operating in the city taken together.

Such comparisons will often disclose that if a city ranks high in one of the services listed in the table, it also ranks high in others. For example, in the present study, four cities are included in the upper third of cities in all of the five services. These cities are: Chattanooga,

SUMMARY AND COMPARISON OF SERVICES GIVEN IN VENEREAL DISEASE CLINICS, DURING 1923, IN THE 86 CITIES SURVEYED

Classification of Cities *	Record Considered	Services per 100,000 population				
		New Patients Registered	Att'dance At Clinic	Total	Number of Treatments	
					Syphilis	Gonorrhea
Upper Third	Maximum	2,347	33,781	31,515	20,250	15,915
of Cities	Average	800	10,707	12,666	8,044	5,705
	Minimum	401	4,180	6,580	4,290	2,160
Middle Third	Maximum	398	4,160	6,129	3,950	2,008
of Cities	Average	270	3,269	4,279	3,026	1,372
	Minimum	211	2,390	2,865	1,995	995
Lower Third	Maximum	206	2,320	2,820	1,840	819
of Cities	Average	27	1,075	1,546	926	313
	Minimum	8	12	92	33	17
Total cities reporting		48	48	43	40	39
Cities with no clinic		21	21	21	21	21
Cities for which Informa- tion is unobtainable or lacking		17	17	22	25	26
Total cities surveyed		86	86	86	86	86

* The cities are classified independently in respect to each of the services. It is possible for any city to be one of the upper third of cities, in respect to one of the types of service, but to fall in the middle third, or lower third in respect to the other two.

Macon, Terre Haute, and Springfield, Illinois. Eight cities are in the upper third in all but one of the services: Mobile, Springfield, Missouri, Augusta, Lexington, Montgomery, Atlantic City, Jackson and Winston-Salem. The other cities included in the upper third in one, two or three of the services are: Lincoln, Wheeling, East St. Louis, Pueblo, Binghamton, Topeka, Stockton, Saginaw, Covington, Decatur, York and Lima.

APPRAISAL OF VENEREAL DISEASE CONTROL

It has been pointed out in the preceding discussion that the items considered in rating the venereal disease control activities are as follows: Physicians' hours in clinics; clinic visits; new patients registered in clinics; and the requirement of treating babies' eyes with prophylactic silver solution. Of the 4 items considered 3 have to do with clinics. Thus, in the present survey, the 21 cities without clinics score only in the item last named, to which a value of three points is assigned. A total of 50 points is assigned for venereal disease control.

Chart 17 shows the per cent of perfect score obtained by each of the 86 cities. Its conformation is unusual and at once reveals the striking characteristic of the status of clinic activity directed against venereal diseases in cities of this size. Sixteen cities find no difficulty in obtaining a full score for their clinic work, while the 21 cities which are not conducting some form of clinic service score practically nothing.

The ratings of the cities for venereal disease control, on the basis of the items listed above, have been tabulated so as to show the average, maximum and minimum scores attained by the upper, middle and lower third of cities. It reveals that the upper third of cities with an average score of 95, are using their machinery in sufficient measure to attain the standards called for, while the lower third, with an average score of 8, are doing practically nothing. The middle group attains a score of 58.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	95	100	82
Middle Third	29	58	80	28
Lower Third	28	8	20	0
Entire Group	86	54	100	0

THE APPRAISAL FORM FOR VENEREAL DISEASE CONTROL

Below are reproduced the items and values tentatively adopted as described elsewhere for appraising venereal disease control.

VENEREAL DISEASE CONTROL (Total Points 50)

		Value of Item
<i>Reporting</i>		12
Standard: 500 cases per 100,000 population		
The above standard is equivalent to scoring 1 point for every 25 cases between 200 and 500		
Cases 500	12 Points	
200	0	
<i>Clinical Service</i>		
Clinic Visits		30
Standard: 5,000 Visits per 100,000 Population		
Visits 5,000	30 Points	
0	0	
<i>Cases Returned to Physicians or Clinics</i>		
Total number of cases returned to physicians or clinics after having stopped treatment		8
Standard: 100 Cases per 100,000 Population		
Cases 100	8 Points	
0	0	

In regard to rating venereal disease control it was necessary to make substitutions as only the item of clinic visits was available from the survey. The number of physician-hours in clinic per 100,000 population was substituted for the first item. The total number of new cases registered at the clinic and the prophylactic treatment of the eyes of the new-born was substituted for the last item.

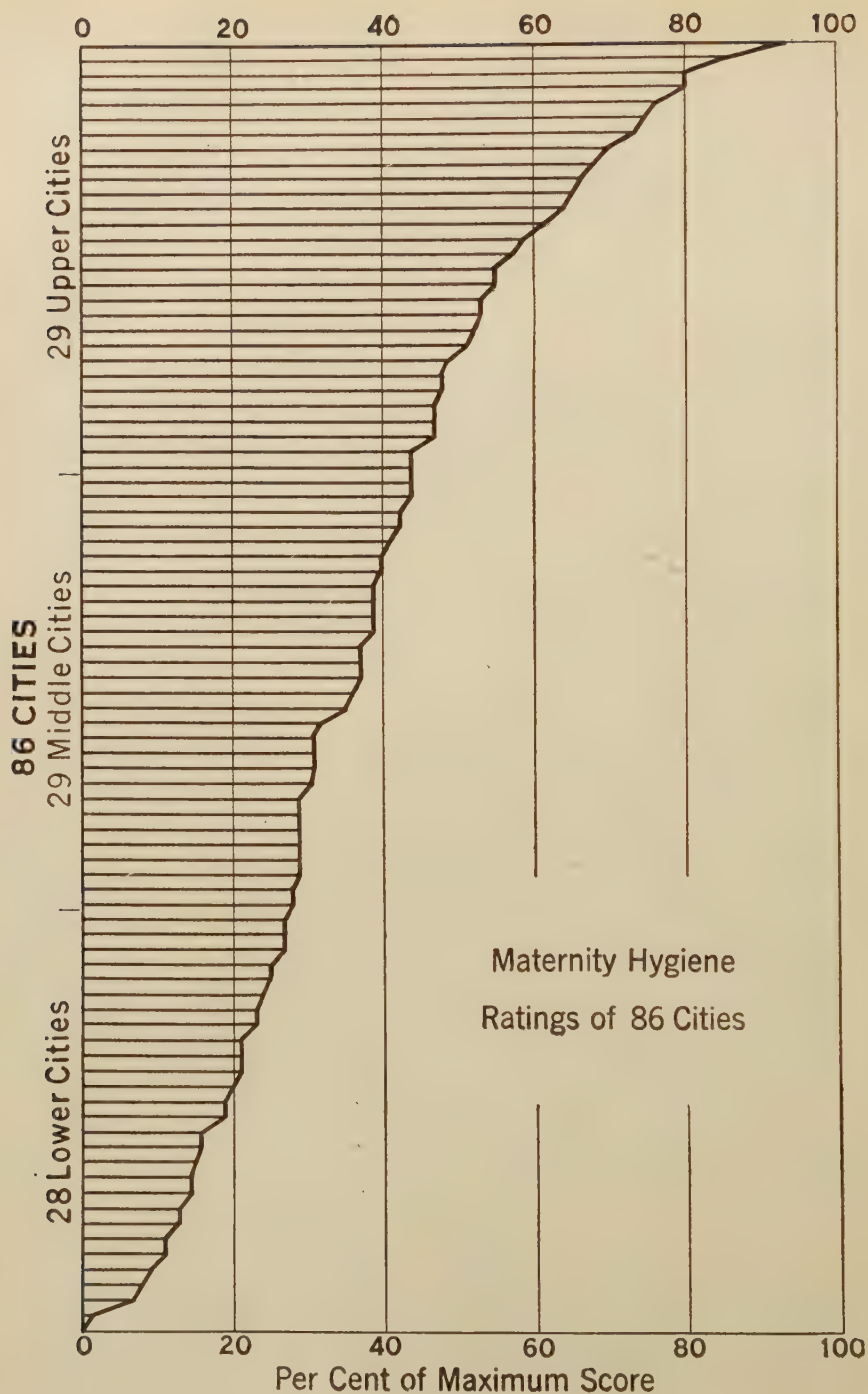


CHART 21

CHAPTER VII

MATERNITY HYGIENE

Maternity hygiene as a branch of public health work was practically unknown at the beginning of the century. Measures intended to effect a reduction in deaths of infants under one year of age, however, were beginning to make their appearance here and there. As these services for the reduction of infant mortality became organized it was apparent that the mortality during the first week of life was very high. Just how large a factor this was in the infant mortality rate was not known until the Bureau of the Census in 1913 published for the first time in "Mortality Statistics for 1910", detailed tables of mortality under one year. A study of these deaths in the early days of life indicated that their causes lay in the pre-natal period, and that measures for their prevention must be concentrated on the mother over a considerable period of her pregnancy.

Furthermore, it was discovered that the conditions present during the period of pregnancy extend their influence far beyond the first months of the baby's life. For example, recent work has demonstrated that the nutrition of the mother is reflected in the child's nutrition and the character of his teeth.

With increasing knowledge concerning the importance of the influence of the period of pregnancy on the child, the period of pre-natal supervision has been extended. Now the best practice calls for intelligent supervision from the earliest months of pregnancy.

The objectives of adequate maternity hygiene are:

- (a) The preparation of each mother to attain intelligent motherhood.
- (b) To reduce the deaths of mothers and infants to the irreducible minimum.
- (c) To leave the mother in the best possible condition to carry on the growing obligations of family and home.
- (d) To give each baby a good start on the road to a strong and healthful childhood.

It is the responsibility of the state to see to it that no mother or child shall suffer for want of adequate maternity service. Where parents

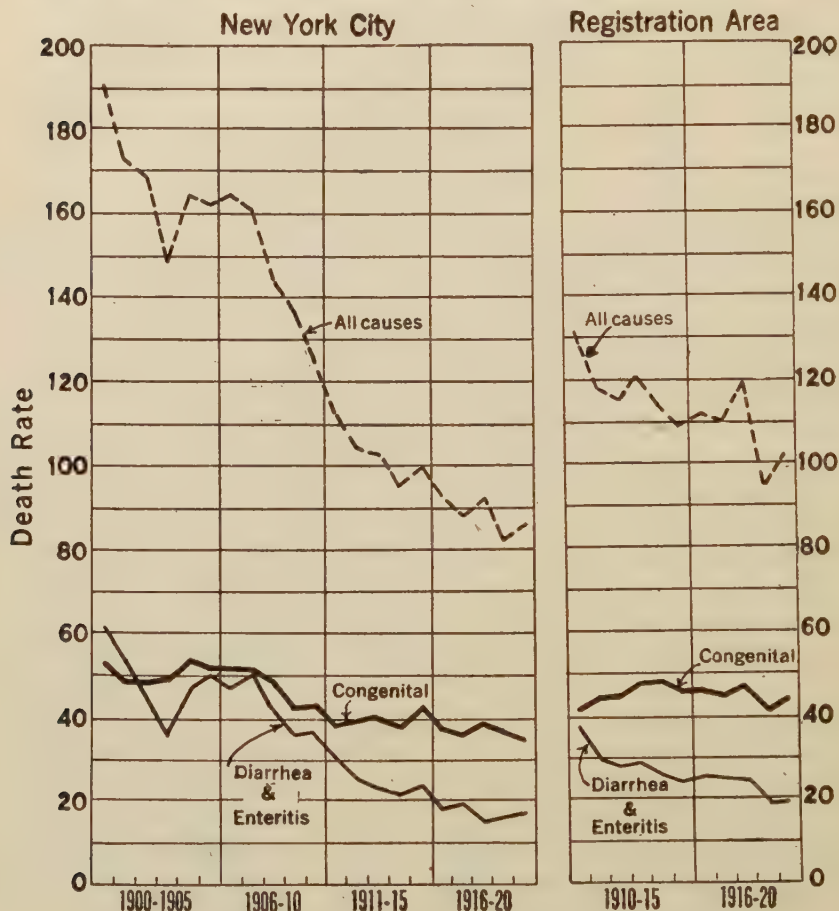


CHART 22

Deaths under One Year of Age per 1,000 Children Living at that Age from All Causes, Congenital, Diarrhea and Enteritis, for the Registration Area from 1910-1920, and for the City of New York from 1900-1920.

Deaths from congenital causes, which are influenced by pre-natal conditions, have shown no appreciable decline since 1910.

are not able to meet these demands the necessary facilities should be provided at public expense.

Certain cities furnish an excellent obstetrical, medical and nursing service, free or at very moderate cost. This provides pre-natal care as well as care at delivery and afterward. In other instances class

instruction, clinics and home visiting by nurses have succeeded in bringing practically every mother under supervision.

The growth and spread of well planned and wisely carried out pre-natal service has been slower than that of infant welfare, particularly in the smaller cities. Chart 23, showing the distribution of cities by per cent of maximum score attained in these two activities, indicates that a considerably larger number of cities achieve a high standing in infant welfare than in pre-natal service.

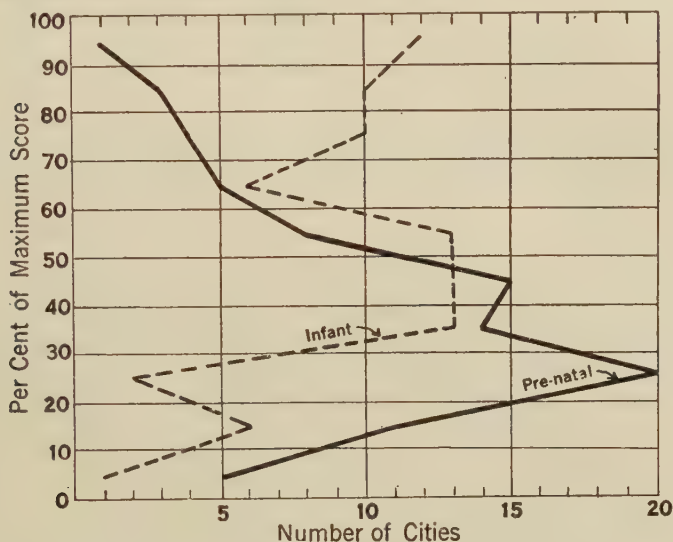


CHART 23

Status of Infant and Pre-natal Service in the 86 Cities.

Satisfactory records of pre-natal care, public or private, and of the facts relating thereto are incomplete and not recorded on a uniform basis. Even today such a significant item as the period of pregnancy at which mothers first come under supervision is frequently entirely overlooked.

THE LOCAL PROBLEM

The principal facts necessary for the solution of a local maternity hygiene problem are: the number of pregnancies; the number of stillbirths; the number of mothers dying from causes due to child-birth; the number of deaths of infants due to congenital causes and to diseases of early infancy. A consideration of these facts for the 86 cities indicates the wide range which exists.

THE BIRTH RATE

The birth rate for 1923 in the 86 cities ranged between 12 and 33 per 1,000 population, as shown below:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	27	33	25
Middle Third	29	22	25	21
Lower Third	28	19	21	12
Entire Group	86	23	33	12

The rate for all registration cities in 1923 was 22.1

Cities in Upper Third:—Springfield, Mo., Johnstown, Roanoke, Woonsocket, Wheeling, Charlotte, McKeesport, New Castle, Lancaster, Sacramento, Augusta, Fitchburg, Holyoke, Passaic, Niagara Falls, Gary, Fresno, Chelsea, Everett, Kalamazoo, Perth Amboy, Winston-Salem, Huntington, New Britain, Malden, Bethlehem, Topeka and Salem.

The highest birth rate (33) was in Springfield, Missouri, which applied to a city of 50,000 would mean 1,650 births a year. The lowest rate (12) in Cicero, Illinois, on the same basis, would mean but 600 new babies. It is possible that the proximity of Cicero to Chicago may have resulted in a slightly lower rate due to births occurring in the nearby hospitals of Chicago which were not reported in Cicero. The rate in Butte, however, is but one point higher, which would mean but 650 births for a city of this size. At present Butte is a city with a decreasing population, due to industrial conditions, hence, unattractive to young people. This wide variation in number of births, due to the many factors involved in the birth rate, makes it difficult to set up quantitative standards of service needed for a city of 50,000.

THE STILL-BIRTH RATE

The still-births per 1,000 total births in 1923 show a variation from 21 to 131 in the 84 cities from which figures could be obtained.

The still-birth rate of 21 in Everett and Quincy is an indication of what is possible under favorable conditions of population. In neither of these communities is there any concerted effort being put forth to reduce the economic waste due to still-birth. They are average or above in birth rate, having rates of 26 and 22, respectively. A fairly stable population with a low percentage of negroes and a very com-

plete reporting of births are the factors probably responsible for the low still-birth rate.

At the other extreme stands Charleston with a rate of 131. Here there exists the beginning of a pre-natal service, but confronted with a colored population equal to 47 per cent of the whole and a birth registration that is known to be incomplete.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	28	29	34	21
Middle Third	28	38	44	34
Lower Third	28	61	131	44
Entire Group	84	41	131	21

Cities in Upper Third:—Everett, Quincy, Wichita Falls, Cedar Rapids, Lakewood, Decatur, Woonsocket, Sacramento, New Castle, Altoona, Pasadena, Fitchburg, Newton, Lima, Fresno, Davenport, Rockford, Haverhill, Stockton, San José, Pittsfield, Butte, Salem, Pawtucket, Niagara Falls, New Britain, East Orange and Wheeling.

The average rate for the cities of the upper third is considerably below that of those in the lower group. The average of 41 for the entire group is five-tenths of a point higher than the figure for the registration area, as might be expected, due to the generally higher rates in cities.

DEATHS FROM PUERPERAL CAUSES

The maternal mortality per 100,000 population from puerperal causes in 1922 shows a distribution from 0 to 63, with an average for the 81 cities reporting of 19.0. The details are:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	27	9	13	0
Middle Third	27	18	21	14
Lower Third	27	30	63	21
Entire Group	81	19	63	0

Cities in Upper Third:—West Hoboken, Bethlehem, Muncie, Lakewood, Everett, East Orange, Haverhill, Pawtucket, Chelsea, Hamtramck, Salem, San José, Quincy, Berkeley, Binghamton, Kenosha, Mt. Vernon, Rockford, Pueblo, Brockton, Galveston, Hoboken, Decatur, Jackson, Lansing, New Britain and Pasadena.

The presence of a zero in the record of the upper third will naturally attract attention and possibly raise a challenge. This city, West Hoboken, has no hospital within its confines and deaths of mothers who have died in hospitals outside of the city of West Ho-

boken were not recorded in West Hoboken. The next three cities report only 2, 3 and 4 deaths, respectively, giving credence to the possibility of an actual maternal mortality of zero.

DEATHS IN EARLY INFANCY

In the 77 cities for which figures were available, the deaths from malformations and diseases of early infancy (International List of Causes of Death, Nos. 159-163) per 1,000 live births for 1922 ranged from a minimum of 12 to a maximum of 83 as follows:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	26	29	37	12
Middle Third	26	40	42	37
Lower Third	25	51	83	43
Entire Group	77	40	83	12

Cities in Upper Third:—East Orange, Newton, Chelsea, Berkeley, Malden, Pasadena, San José, Tampa, Everett, Stockton, Macon, Perth Amboy, Butte, Gary, Pittsfield, Racine, Shreveport, West Hoboken, Lansing, Passaic, Quincy, York, Hoboken, Topeka, Fresno and Lincoln.

In this item one sees indications of the preventive work which is just getting under way. While the results are not yet such as to permit of statistical analysis, still the presence in the upper third of cities like East Orange, Berkeley and York, which have been carrying on pre-natal services for several years, is probably not mere accident.

CLINICS

In 1920, sixty-eight of the 83 largest cities had already established clinics for the promotion of maternity hygiene either by public or private means. In 1923 such service had been instituted in only a little more than half of the smaller cities. Forty cities have established clinics under the direction of a physician to advise, guide and assist expectant mothers. Five other cities have established mother's conferences, directed by the local nursing organization, in which class and individual instruction is given but without medical supervision. In the remaining 41 cities no organized pre-natal service whatever has been established.

AGENCIES MAINTAINING CLINICS

The operation of the pre-natal clinics was entirely under private auspices in 19 cities; in 16 the municipality alone operated the

service; in 2 cities the work was performed jointly by the public and private agency; in 2 more the state was responsible and the county and city combined in one instance. Though private agencies have taken the lead in establishing these services the tendency at the present time is to turn them over for official operation as rapidly as the opportunity is offered.

FREQUENCY OF CLINICS

In 27 of the 39 cities reporting, pre-natal clinics are held once a week; in two cities the clinics are held once in two weeks or three times a month; two and three clinics a week are reported by two cities each, and five and six clinics a week by three cities each. In these latter cases the clinics are held as a part of a more general service at a hospital health center. The most common practice is to hold a clinic for a period of two hours.

HOURS OF PROFESSIONAL SERVICE IN CLINICS

Chart 24 shows the 40 cities reporting pre-natal clinics arranged by number of hours given by physicians to the clinic service each

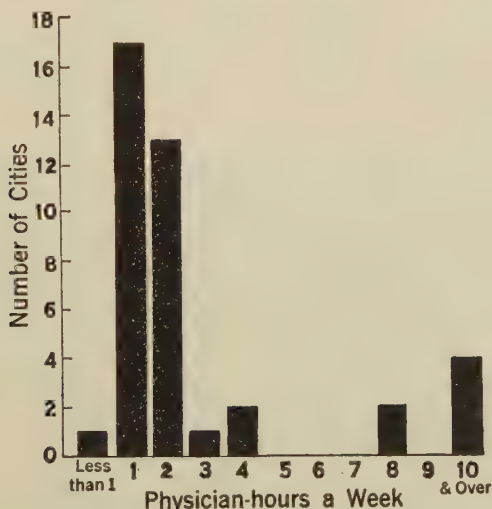


CHART 24

week. Similarly in Chart 25 the distribution of cities is shown on the basis of the hours of nursing service in the clinics each week.

The nursing service in the clinic is shown to be slightly greater in amount than the service by the physician, which is due no doubt to the service given by the nurse in the organization of the clinic and in her instructions to the mothers.

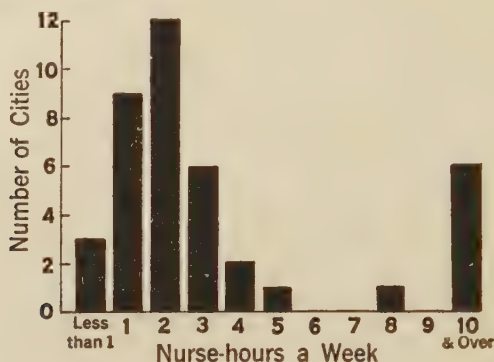


CHART 25

In 8 cities, other personnel is called upon to assist in the work of the clinic.

It is interesting to note to what extent this service is still dependent upon voluntary support. In 32 out of the 40 clinics the physicians give their services to the clinic entirely without cost.

CLINIC REGISTRATION

Applying the average birth rate of the 86 cities, to a city of 50,000, there would be about 1,200 pregnancies a year. The proportion of these mothers who might be expected to register in a pre-natal clinic is dependent largely upon the economic and social condition of the citizens. In the 27 cities reporting, the number of registrants varied from 0 to 169 per 1,000 total births as follows:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	9	99	169	63
Middle Third	9	36	61	18
Lower Third	9	8	17	0
Entire Group	27	48	169	0

Cities in Upper Third:—Brockton, East Orange, Pawtucket, Davenport, Berkeley, Binghamton, Sacramento, West Hoboken, and Cedar Rapids.

In considering what is practicable for the purpose of planning health department organization, a registration of 15 per cent has been

considered to be reasonable. Only 2 of the 27 cities met such a standard, though the average for the first 5 cities is 118 registrants per 1,000 births.

CLINIC ATTENDANCE

The frequency of clinic attendance by expectant mothers shows a surprising consistency. The ratio for the cities of the upper and lower thirds is 3 clinic visits per case, while the middle third at 2.3 visits per case is only slightly less. The best city shows a frequency of 5.6 visits per case.

The total attendance for the 29 cities reporting varies between 0 and 771 visits per 1,000 total births.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	10	291	771	114
Middle Third	10	82	109	54
Lower Third	9	25	41	0
Entire Group	29	139	771	0

Cities in Upper Third:—East Orange, Augusta, Pawtucket, Galveston, Charleston, Chester, Pasadena, Macon, San José and Newton.

FIELD NURSING SERVICE

In order that the advice and instruction given in the clinic may be effective nurses' follow-up visits to the home are essential. Sixty-five cities have already established such a service in connection with the pre-natal clinic. The extent of this service ranges from 0 to 2,165 nursing visits per 1,000 total births. The variations in the 42 cities reporting were:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	14	1017*	2165	489
Middle Third	14	284	451	158
Lower Third	14	73	131	0
Entire Group	42	458	2165	0

Cities in Upper Third:—Holyoke, Pawtucket, Everett, East Orange, Macon,* Brockton, Augusta, Charlotte, Chelsea, Charleston, Galveston, Newton, Atlantic City and Berkeley.

* Includes Macon, 1,290 visits per 1,000 total births made by social worker.

Attention should be directed to the activities of the cities in the upper third. The average shows 1,017 nursing visits per 1,000 births. Referring to the table following which shows extent of organized

supervision, it is apparent that less than one-half of the expectant mothers of a community are the recipients of the visits so that this figure represents from 1 to 8 home visits per mother under supervision. Comparing these 8 visits with the period during which the mother is under supervision it is found that this highest rate is all that could be expected; only four cities, however, report more than four visits per patient.

The per cent of total births in 27 cities having organized supervision by either clinic or field nursing service ranges from 2 to 44.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	9	25	44	16
Middle Third	9	11	14	9
Lower Third	9	6	9	2
Entire Group	27	14	44	2

Cities in Upper Third:—York, Chelsea, East Orange, Holyoke, Mt. Vernon, East St. Louis, Passaic, Pawtucket and Lima.

In York the complete program of the Visiting Nurse Association which includes an excellent obstetrical service has been largely responsible for getting mothers under supervision at an early date in the pre-natal period.

HOSPITALIZATION

BEDS FOR MATERNITY CASES

There is a need in practically every community for a certain number of hospital beds for maternity cases. The difficult cases may require facilities not usually present in the home. In many cities the practice of depending upon hospitals for delivery service has grown up as a matter of convenience. Our growing use of apartment houses has been instrumental in curtailing home deliveries. Below, the number of hospital beds available for maternity cases per 1,000 total births shows a wide variation in the 65 cities reporting.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	22	45	179	29
Middle Third	22	21	29	14
Lower Third	21	8	14	0

Cities in Upper Third:—East Orange, Sacramento, Berkeley, Elmira, Wichita Falls, Pittsfield, Newton, Lexington, Springfield, Ill., Rockford, San José, Atlantic City, Salem, Kalamazoo, Lansing, Brockton, Racine, Decatur, Chester, Charleston, Gary and Covington.

Four of the 65 cities have no hospital beds for obstetrical cases.

PROPORTION OF BIRTHS IN HOSPITALS

The percent of the total births occurring in hospitals shows a range from 0 to 69 per cent.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	24	51	69	36
Middle Third	24	29	35	24
Lower Third	23	13	23	0
Entire Group	71	32	69	0

Cities in Upper Third:—Berkeley, Kalamazoo, Elmira, Rockford, Decatur, Pittsfield, East Orange, Jackson, Racine, Springfield, Ill., Malden, Atlantic City, Kenosha, Highland Park, Newton, Lexington, Binghamton, Stockton, Brockton, Holyoke, San José, Mt. Vernon, Charleston, Haverhill and Niagara Falls.

Of the 10 cities having the highest per cent of births in hospitals 9 cities are also in the upper third group as to bed capacity.

THE PRACTICE OF MIDWIFERY

Though 19 cities denied the presence of midwives and several states do not legally recognize them, a considerable number of births in each city are doubtless attended by midwives of varying degrees of training and supervision.

Of the 67 cities which recognize existence of midwives, 57 require that they shall be registered. In 29 cities they are reported as being under supervision. This supervision may mean merely that the names of the midwives are known to the health officer or to the city clerk and that the midwives must report annually at the time of renewing their registration. Or it may mean careful examination of each individual to determine her fitness for this service and such close correlation with the pre-natal service that each case to be delivered by a midwife be registered in this service and supervised for a considerable portion of the pregnancy.

In 28 cities definite effort is made to train midwives, usually by class instruction. In some instances this is supplemented by practical demonstration and direct field supervision. In 33 cities midwives must report difficult cases and call a physician for assistance.

NUMBER OF MIDWIVES

The number of midwives per 1,000 total births varies from 1 to 118, the average for the 52 cities reporting being 11.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	18	27	118	9
Middle Third	17	5	7	4
Lower Third	17	2	4	1

It has been the custom in presenting similar tabulations to list that third of the cities which demonstrate the best practice. In considering the question in hand, however, there is no ready and acceptable guide pointing to the best practice. We have the extremes of an entire state where midwives are not recognized, and another where midwives are subject to examination, training and supervision by the state, yet the maternal mortality, the infant mortality and the mortality in the first month of life for the cities represented are practically the same.

Even if there existed a considerable difference between these crude rates, the difference might as well, in the light of our present knowledge, be attributed to a number of other factors concerning whose comparability we know nothing, as to this difference of policy concerning the practice of midwifery.

PROPORTION OF BIRTHS DELIVERED BY MIDWIVES

The proportion of the total births delivered by midwives could be obtained in only 39 cities. In this group it varied from 0 to 52 per cent as shown:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	13	35	52	25
Middle Third	13	12	21	6
Lower Third	13	3	5	0
Entire Group	39	17	52	0

These figures are influenced materially by the racial and color characteristics of a city's population. In many of the southern cities, for instance, it is known that a large part of the births, particularly among the negro population, are delivered by midwives and that these in general are not well reported. The numbers reported, no doubt, are all below the actual deliveries.

The wide variation in the registration and supervision of midwives as required in the several cities is evidence of the unsettled state of this subject.

	No. of Cities
Midwives are registered by the	
City Department of Health	24
State	23
City Clerk	2
City Health Officer	1
Department of Health and State	1
Department of Health and American Red Cross	1
County	1
Public Health Nursing Association	1
Information Unobtainable or Lacking	3

THE CONTROL OF OPHTHALMIA NEONATORUM

Each of the 31 states represented in this survey has a law requiring the reporting of cases of ophthalmia neonatorum to the health department. In 19 of these states the health officer is empowered and required to secure adequate attention for uncared for cases. There are, however, but 17 states which have laid down the specific requirement that each attendant at birth shall give the eyes of the new-born prophylactic treatment. The cities in most instances have filled this gap, for only 3 of the 86 cities report the absence of such a requirement.

Even though all the states have made reporting a requirement, 32 cities had no record of the cases of ophthalmia neonatorum which had occurred during 1923. Twenty-three cities reported a total of 128 cases. One city, Brockton, reported 108 cases of babies with sore eyes under treatment, 33 of which proved to be ophthalmia. Deducting this rather unusual number of cases, the average for 22 cities is 4 cases, or a rate of 8 per 100,000 population.

A statement of the National Committee for the Prevention of Blindness, issued January, 1924, shows some very encouraging results. Grand Rapids reports that there is no blind child of school age in the city. Cleveland reports that there is no blind child under three years.

Such results are well within the reach of each community, yet they may only be obtained by eternal vigilance and prompt treatment of any case that develops.

THE APPRAISAL OF MATERNITY HYGIENE

To establish measures of the activity in the interest of maternity hygiene, seven indices have been selected. These are given in detail at the end of this chapter. These indices may be classified as follows:

- a. The extent of education and medical influences. (Clinic and Nursing visits.)
- b. Community customs as to care at birth. (Births in hospitals, births by midwives and supervision of midwives.)
- c. Partial results. (Still-birth rate, death rate in early infancy.)

When applied to a community, with appropriate values and standards attached, these items are means of comparing the community's maternity service and the effectiveness of its program with its recognized responsibilities.

The distribution of cities on the basis of score attained is shown graphically in Chart 21. Four cities have achieved 80 per cent of the full score or better, but only 9 attain two-thirds of the full score.

In the following table the cities are grouped by thirds with an average for the upper third of 61 per cent of maximum score. The average for all cities in this item is 38 per cent of maximum score.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	61	94	44
Middle Third	29	35	44	28
Lower Third	28	17	28	0
Entire Group	86	38	94	0

THE APPRAISAL FORM FOR MATERNITY HYGIENE

Below are reproduced the items and values tentatively adopted as described elsewhere for appraising maternity hygiene.

	Value of Item
PRE-NATAL (Total points 75)	
<i>Field Nursing Service</i>	
Number of nurses' visits made in behalf of pre-natal cases	20
Std.: 1,000 visits per 1,000 total births.	
Visits 1,000	20 Points
0	0

Clinical Service

Number of visits of pre-natal cases to clinics 15

Std.: 250 visits per 1,000 total births

Visits	250	15 Points
	0	0

Obstetrical Service (20)

a. Per cent of deliveries in hospitals 10

Per cent of	40	10 Points
Births	30	7
	20	4
	10	2
	0	0

b. Per cent of total births attended by midwives 5

Per cent of	20	5 Points
Births	22	4
	26	3
	30	2
	40	1
	50	0

c. If midwives are under competent supervision
or control 5

Still-birth Rate and Infant Death Rate Under One Month (20)

a. Still-birth Rate 10

Std.: 20 still-births per 1,000 total births.

Per cent of	20	10 Points
Still-births	26	8
	32	6
	38	4
	44	2
	50	0

b. Infant Death Rate 10

Std.: 35 infant deaths under one month per
1,000 live births.

Death Rate	35	10 Points
	39	8
	43	6
	47	4
	51	2
	55	0

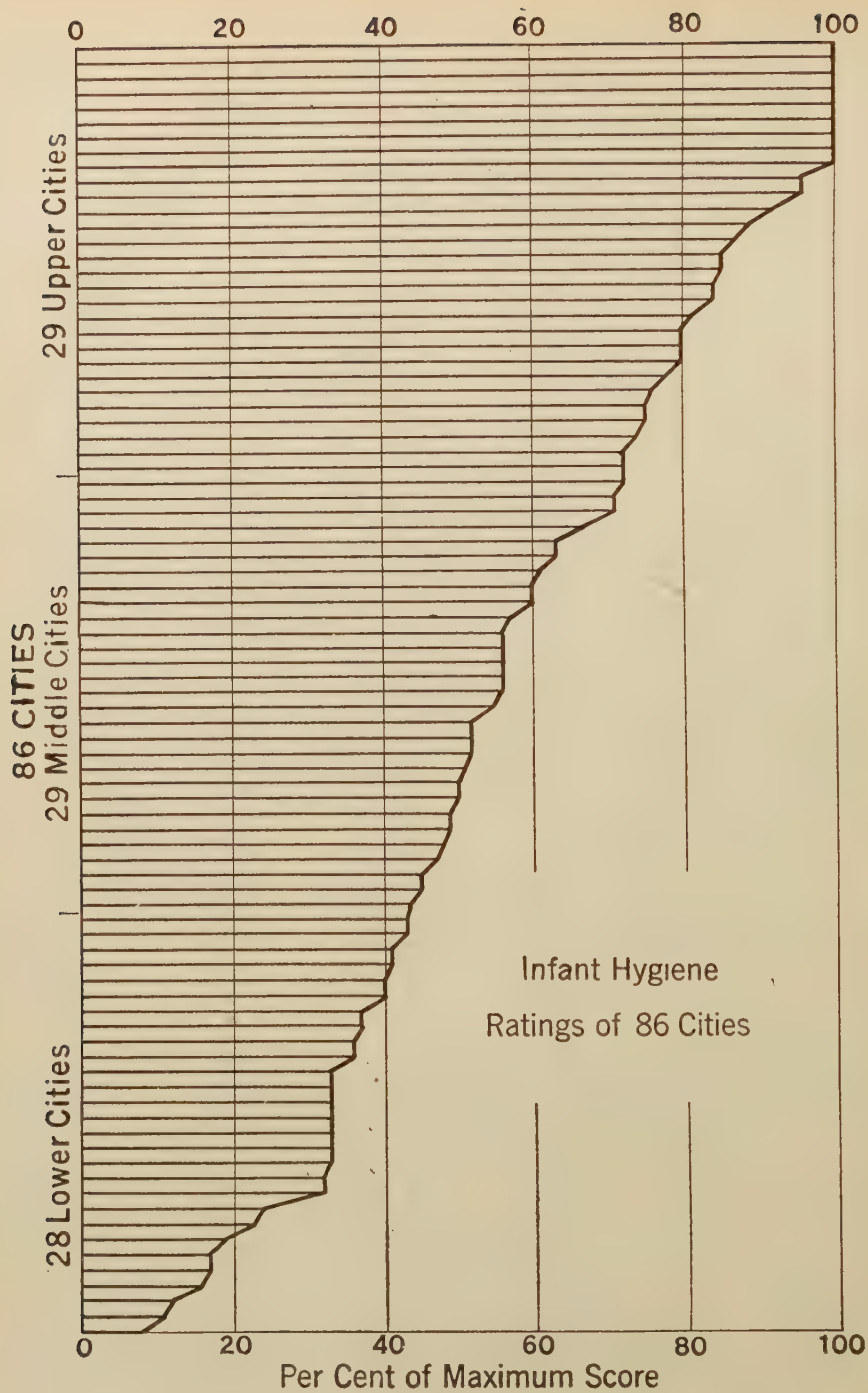


CHART 26

CHAPTER VIII

INFANT HYGIENE

The reduction of infant mortality appeals to the citizen and challenges the public health worker as no other everyday activity in the broad field of health. The saving of infants from unnecessary death has been one of the most striking achievements among the great and distinguishing accomplishments of the twentieth century. Available records indicate that the infant mortality rate today is only half what it was in 1900. Authorities now declare that even the present rate of 72 deaths per 1,000 births can be cut in half.

What have these 86 smaller cities done to combat this unnecessary loss of life? What means have they employed and to what extent? These questions this survey desired to answer. But as has been explained elsewhere, the nature of the brief fact-finding survey did not permit an intensive, qualitative evaluation of the work in each city, nor are we prepared to pass critical judgment thereon. This would be possible only upon a very complete and intimate knowledge of the community and its problems and the quality of the work performed by many individuals.

The difficulty in determining even the simplest facts about the nature and scope of the infant welfare work was found to be unusually great. Purposely, the questions asked in the schedule had been reduced to most precise, objective terms. Wherever possible, the questions were so framed as to require answers in terms of yes or no, or in figures. In spite of all efforts on the part of the surveyors, many questions had to be left with the observation "no record," or "information unobtainable." Frequently information could not be given as to the number of infants under one year enrolled at the clinic, or the number of home visits, and repeatedly the surveyor spent several hours personally seeking the information from the individual clinic records.

Unfortunately, through an oversight, the item calling for attendance at clinic, which was included among the questions asked for in the case of all the other clinic services, was omitted from the

table calling for infant welfare clinic data, and consequently this information is lacking. Furthermore, upon critical analysis of the reported number of infants under one year of age enrolled at the infant welfare clinic, it is evident that in 10 cities the report given to the surveyor and accepted by him refers to attendance rather than enrollment, or to enrollment under two years rather than under one year, as the number of children so reported was larger than the number of live births for the preceding 12 months. The figures from these cities had to be discarded in the final analysis in addition to those from the 12 cities for which information was unobtainable or lacking, and from the 16 cities without medical clinics, leaving in this instance only 48 cities in which the actual number of babies enrolled in clinics is known. This is cited as an example of the type of care that has been taken in making the analysis as reliable as possible.

There were many items in this section of the schedule of which analysis was not attempted because the replies were so general and unreliable. Such questions as: "What per cent of births have post-natal supervision to the extent of at least three calls?" "What per cent of clinic patients come regularly and not only when they are sick?" "What per cent of those attending the clinic obtain milk?" "How is attendance secured?"—such questions, and many more, could not be answered from the records.

The first year of life is the most important, as it is likewise the most perilous. We know increasingly what should be the experience and the habits of the child during this crucial year. But it would add greatly to the effectiveness of our future infant welfare work if we could mark the progress of each community year by year in the proportion of babies that are breast-fed for 7, 8 and 9 months; the proportion of babies receiving at least one hour of outdoor sunshine or outdoor daylight each day; the proportion of babies passing the first year without whooping cough, measles, diarrhea and pneumonia; the proportion of babies seriously seen by nurse or pediatrician in the first week of life; the proportion of babies routinely examined, either by a private physician in the home or by the clinic physician; the proportion of babies weighed at least monthly, either at home or at a clinic. But today our knowledge is limited to the few facts that the exceptional visiting nursing service finds time and foresight to collect and analyze. Since such information could not have been secured directly, and would require a continuous plan of record-keeping, it was not called for in the schedule.

CLINICS

Infant welfare shares with tuberculosis the distinction of being more generally organized than any other of the clinical nursing services in municipal health work. Nevertheless, 6 cities report no organized infant welfare service of any kind. Five cities provide home nursing service only, without medical clinics or nursing conferences; 5 cities have nursing conferences only. Seventy cities have both medical guidance at clinics and home nursing service.

AGENCIES MAINTAINING CLINICS

Although local public agencies might be expected to be assuming the responsibility for this service, local private agencies are still in the lead of official municipal agencies in directing these clinics; county and state take the initiative in only a few instances. The survey findings are as follows:

Type of Agency	No. of Cities
Private	36
Municipal	25
Private and Municipal	4
Private and State	2
Municipal and County	1
Municipal and State	1
Private, Municipal and County	1
Total	70

PROFESSIONAL SERVICE IN CLINICS

Hours Spent by Physicians—The hours devoted weekly to infant welfare clinics by physicians in the 70 cities maintaining clinics is shown graphically in Chart 27.

Two hours of service given at a single weekly clinic is the most common practice. In only 1 or 2 cases did any physician give less than 1 or more than 2 consecutive hours to a single clinic. Larger numbers of hours indicate 2 or more clinics a week. The term “physician-hours” used in the chart may mean 1 physician giving 3 hours or 3 physicians giving 1 hour. This explanation likewise applies to the nursing service discussed in the next paragraph.

Hours Spent by Nurses—Chart 28 presents graphically the number of hours spent by nurses weekly at infant clinics in each of the 69 cities reporting both medical and nursing personnel.

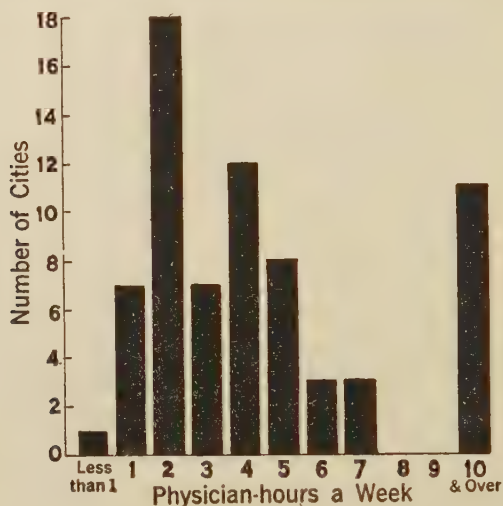


CHART 27

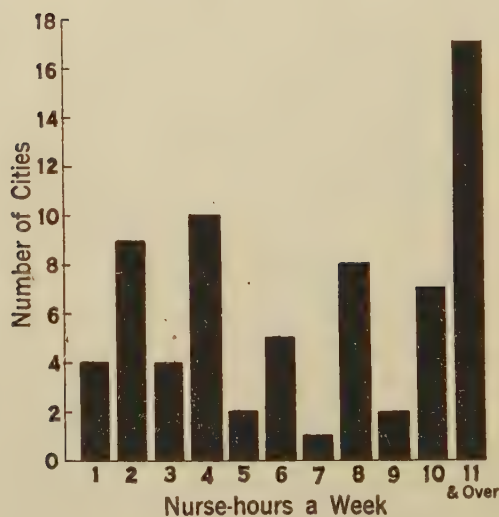


CHART 28

. In 43, or nearly two-thirds of the 69 cities, less than 9 hours of nursing service a week is devoted to the clinics. In 24 cities, 10 or

more hours a week are given by the nursing service. Hoboken, West Hoboken, and Bethlehem each have 1 or more nurses in constant attendance. The average number of hours of nursing service (disregarding these 3 cities) is 7.8 weekly. An additional service, including clerks, volunteers, or personnel other than nurses, is found in 32 cities. An average of 7.9 hours a week of such service is given.

CLINIC REGISTRATION

One of the valuable criteria of an infant welfare service is the examination of an infant at a clinic by a physician interested in keeping the child well, and the assistance of a nurse who will help the mother to carry out his instructions. The ratio of infants under 1 year of age registered at such a clinic to the total number of babies born gives some idea of the extent to which the infant group is under medical and nursing supervision. It does not, of course, indicate the number of children who are under the health supervision of private physicians, a number which varies in the different cities.

The following table presents the data in respect to clinic registration, expressed in terms of the number of infants under 1 year of age registered at the clinic per 1,000 live births, for the 48 cities reporting. In 22 cities the information was unobtainable or lacking, in 11 cities there were no clinics, and in 5 cities nursing conferences only were held.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	16	548	905	297
Middle Third	16	218	296	164
Lower Third	16	110	161	29
Entire Group	48	292	905	29

Cities in Upper Third:—Perth Amboy, Passaic, Hoboken, Binghamton, York, Davenport, East Orange, Macon, Winston-Salem, Stockton, Atlantic City, Lexington, Jackson, Brockton, Rockford and Malden.

From this table it may be noted that for each thousand of births in the city the number of babies registered at the clinic varies widely, from 29 in one city to 905 in another. The average enrollment ratio for the upper third of cities is 548, or a little more than one-half of the infants. The middle third enrolls about one-fifth, the lower third only one-tenth. For the entire 48 cities the average is 292 infants for each 1,000 births. In the 1920 survey of the 83 larger cities, 239 was the average.

Average Age on Admission—Only 34 of the 70 cities reported information on this point sufficiently specific to be tabulated. Of these 34, twenty-five, or three-quarters, secure their babies during the first 4 months of age. The variation in reported practice in this respect is particularly interesting to note:

Average age in Months	No. of Cities
Less than 1	2
1	3
2	2
3	12
4	6
5	4
6	3
7	0
8	2

DISTRIBUTION OF MILK

Twenty-one cities dispense milk at infant clinics. The distinction was not made as to whether this milk is distributed free or for a moderate fee. Milk distribution from infant welfare stations is more prevalent in the smaller cities than in the larger ones, as the 1920 report on 83 larger cities showed that only 9 stations dispensed free milk.

FIELD NURSING SERVICE

An indispensable part of an effective infant welfare service is the ministration of the public health nurse in the home. Her rôle as a practical teacher of infant hygiene, as a reconnoiterer for the first indications that a baby is not doing well, as the deputy of the physician under whose care the baby may be, cannot be assumed by anyone else. All but 6 of the 86 cities have provided themselves with some infant welfare nursing service.

NURSING VISITS

The following table shows how extensive this nursing service is in 65 cities. The information regarding the number of nursing visits to infants under 1 year of age is expressed in terms of the number of visits per 1,000 live births. The information could not be obtained in 15 cities, and 6 cities have no home nursing service.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	22	5,067	9,350	2,330
Middle Third	22	1,350	2,250	859
Lower Third	21	537	848	134
Entire Group	65	2,345	9,350	134

Cities in Upper Third:—Brockton, Springfield, Ill., Fitchburg, Salem, Pawtucket, Perth Amboy, Bethlehem, Muncie, Niagara Falls, Binghamton, York, East Orange, Woonsocket, Passaic, Holyoke, Atlantic City, Galveston, Topeka, Kalamazoo, Newton, San José and Portland.

Seventy times the number of visits were made by the city at the top of the list as were made by that at the foot of the list. The average of the 22 cities in the upper third group represents 5 home nursing visits per live birth. It must of course be understood that this may mean that 10 visits are paid to one child and only 1 or 0 to another. The figure 5 is an average figure. This average is probably not far from the service aimed for in intensive infant welfare work. The average of the 5 cities with the highest number of field visits is $8\frac{1}{4}$ visits for each live birth. This is 4 times the average service of the middle third and 10 times the average service of the lower third.

The influence of such factors as the development of the clinic service, the type of nursing service and the racial and economic condition of the city population is undoubtedly reflected to some extent in the number of nursing visits. Under certain conditions a city with a smaller number of visits might be meeting the needs of its infants better than a city making more home nursing visits. However, the insignificant number of nursing visits made by the cities in the lower third indicates that these cities are still scarcely touching the problem.

INFANT MORTALITY

There can be no facts of greater consequence to the mothers and fathers of the country than that 4 babies die in one American city to 1 dying in another. In the city showing the highest infant mortality in 1923 there were 147 infant deaths per 1,000 live births as compared with but 38 infant deaths per 1,000 live births in the same year in the city having the lowest infant mortality.

REDUCTION OF INFANT MORTALITY

The following table shows the contrast in infant mortality rates in 76 of the 86 cities surveyed and the changes which have occurred

in them during the last 3-year period, 1921-1923, as compared with the average rate for the preceding 5-year period, 1916-1920. There has been an average drop of 19.3 points, a reduction from 99.0 to 79.7. Although, the lowest rate reported in 1921-1923 is only 4 points lower than the lowest rate reported in the 1916-1920 period, it is encouraging to note that the highest rate is 13 points lower than in the earlier period.

AVERAGE INFANT MORTALITY RATES FOR 76 CITIES, 1921-1923 PERIOD,
COMPARED WITH 1916-1920 PERIOD

10 Cities Information Unobtainable or Lacking

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	26			
1916-20		77	100	42
1921-23		62	74	38
Reduction		15	26	4
Middle Third	25			
1916-20		100	146	78
1921-23		78	84	74
Reduction		22	62	4
Lower Third	25			
1916-20		119	160	94
1921-23		99	147	85
Reduction		20	13	9
Entire Group	76			
1916-20		99	160	42
1921-23		80	147	38
Reduction		19	13	4

Cities in Upper Third: Pasadena, Berkeley, West Hoboken, Newton, San José, East Orange, Malden, Chelsea, Lincoln, Pittsfield, Quincy, Everett, Highland Park, Mount Vernon, Brockton, Kalamazoo, Lakewood, Covington, York, Lima, Rockford, Haverhill, Passaic, Racine and Stockton.

A striking finding of the report is that the least reductions are to be observed in the group having the lowest infant mortality rate and the greatest reductions in the group having neither the highest nor the lowest rate, but in the middle group. This would seem to indicate that conditions influencing infant mortality in those cities that had low mortality are already pretty well under control, and that conditions in cities of the middle third group particularly are such that they are now yielding to the influences which are being brought

to bear upon them so as to effect reduction in infant mortality. The basis for assigning cities to each of the three groups was their relative position for the 1921-1923 period.

For the 1916-1920 period the average infant mortality for the lowest group is 42 points higher than the average of the best group; for the 1921-1923 period the difference has been reduced to 37. Clearly, it is still one of the greatest responsibilities of public health officials to conquer those factors in their community which make for a high infant death rate.

INFANT MORTALITY RATES FOR 1921, 1922 AND 1923

Infant mortality rates for the 76 cities in 1922 and 1923 have not continued to decrease below the exceptionally low rates which occurred in 1921. The following table brings out this point. The grouping of cities is determined by the 1921 rates rather than the 1921-1923 average, which was the basis for grouping in the preceding table. This accounts for the averages in the last column differing from those shown in the preceding table. In 10 cities the information was unobtainable or lacking.

Group	No. of Cities	1921	1922	1923	1921-1923
Upper Third	26	58	67	64	63
Middle Third	25	78	76	81	78
Lower Third	25	100	97	95	98
Entire Group	76	79	80	80	80

APPRAISAL OF INFANT HYGIENE

Three criteria are used in the rating schedule:

1. The extent of clinic attendance by infants under 2 years.
2. The extent of the nurses' visits to the homes of infants under 2 years.
3. The reduction in infant mortality in 1923 as compared with the preceding 5 year average.

Upon the basis of these criteria the infant welfare service of each city has been appraised and their ratings, expressed as the per cent of the maximum score which was received, have been presented in Chart 26. The achievement of 9 cities in securing the maximum score will be noted at one extreme, while the poor showing of the 7

cities scoring less than 20 per cent will also attract attention. Twenty-two cities secure an 80 per cent score or better. The contrast of the chart with that of pre-natal and pre-school work brings out strikingly the relative degree of development of the three activities.

The scores of the 86 cities expressed as per cent of the maximum score have also been tabulated below in order to show for each of three groups of cities the average, maximum and minimum score attained.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	88	100	72
Middle Third	29	56	72	44
Lower Third	28	30	43	8
Entire Group	86	58	100	8

Whereas one group of 29 cities averaged 88 per cent of a possible 100 per cent rating in infant welfare, another group of 28 cities averaged only 30 per cent. It seems reasonably clear that so long as more than one-third of these cities attain a rating of less than 50 per cent the possibilities for still further reducing infant mortality have not yet been exhausted.

A natural question arises as to whether the cities with the highest rating have the lowest infant mortality rates. This is not necessarily the case.

There are a variety of factors which play a part in causing a high or low infant mortality rate. These many factors which influence this rate are economic, social, demographic, sanitary, geographic, climatic, hereditary, and racial. There is the intelligence factor, the element of exposure to disease, the adequacy of medical and nursing service. All these factors which are not affected by clinic-nursing service, however complete, do influence the infant mortality rate. This does not in the least disparage the value of clinic and home nursing service in the reduction of infant mortality, but emphasizes the fact that a low infant mortality rate is not necessarily a matter of mere magnitude of clinic enrollment of babies and of nursing visits to their homes.

As the infant mortality rate is not a complete and adequate measure of the results of infant welfare service, a comparison of the standing of the cities by the rating schedule and the infant mortality rate is invalid. Furthermore, the rating schedule contains as one of its 3 items, infant mortality reduction, based on the mortality for 1923, the same data which would have to be employed for the above

comparison. Obviously the accuracy of yard-stick "A" cannot be measured by yard-stick "B" which was itself made from measurement of yard-stick "A."

THE APPRAISAL FORM FOR INFANT HYGIENE

Below are reproduced the items and values tentatively adopted, as described elsewhere, for appraising infant welfare work.

i	Value of Item
INFANT HYGIENE (Total Points 75)	
<i>Field Nursing Service</i>	
Number of nurses' visits made in behalf of infants under 2 years of age	25
Standard: 2,500 Visits per 1,000 Children.	
Visits 2,500 25 Points 0 0	
If birth certificates are delivered by nurse, score 15 of the 25 points, regardless of other facts.	
<i>Clinical Service</i>	
Number of visits to clinic made by children under 2 years of age	25
Standard: 2,000 Visits per 1,000 Live Births for current year.	
Visits 2,000 25 Points 0 0	
<i>Infant Mortality Reduction</i>	
Score $2\frac{1}{2}$ points for each 1 per cent that the infant mortality rate for the past year is below the aver- age rate for the preceding five years. Maximum score.	25
For rates of 50 or below, score full credit of 25 points regardless of other facts.	

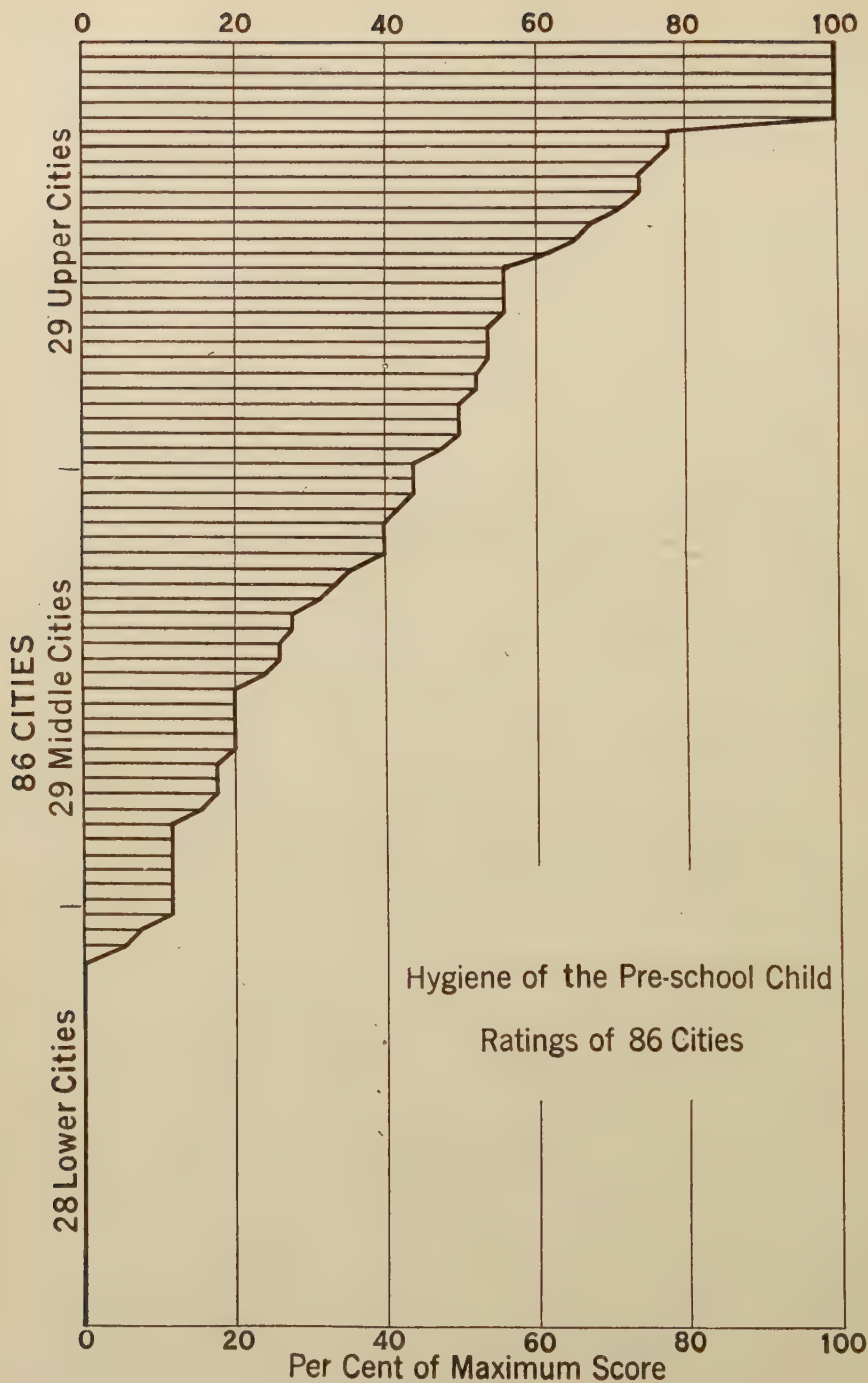


CHART 29

CHAPTER IX

THE HYGIENE OF THE PRE-SCHOOL CHILD

The child from 2 to 6 years of age still remains largely the neglected child of the public health movement. During the past 10 years, it is true, organized health workers have become conscious of his position just beyond the edge of the limelight which has been directed upon his younger and older brother. While they have recognized his existence yet the pre-school child is the recipient of but a very meagre amount of organized medical and nursing service.

STATUS OF ORGANIZED WORK

It is not easy to find entirely satisfactory objective criteria by which to judge the scope and the effectiveness of health work for the child between 2 and 6 years of age. The Appraisal Form, however, suggests 2 types of criteria, and judged by these, the number of visits to clinics and nursing visits to the home, 25 cities are doing practically nothing for the pre-school child, and only 12 cities are accomplishing enough to gain a score of 35 out of the possible 50 points, representing a moderate activity in this field. This is the case in spite of the fact that the 100 per cent standard for scoring is as low as 500 clinic visits and 2,000 home visits per 100,000 population. This is the equivalent of 1 clinic visit a year for each eighteenth child aged 2 to 5 and 1 home visit a year for every fourth or fifth pre-school child in the community.

The average score for the 86 cities is 32 per cent of the maximum score. This places pre-school service as ninth in rank of the 11 major health activities. Pre-natal hygiene and popular health instruction are the only two services which have lower places.

CLINICS

CONNECTION WITH INFANT WELFARE SERVICE

While undoubtedly a few pre-school children are examined incidentally in each infant welfare clinic, only 52 of the 70 cities giving

medical attention to infants under 2 years of age, reported that they were maintaining a clinical service for the pre-school child. Of these 52 cities, 49 stated that the pre-school clinic was in connection with or inseparable from the infant welfare clinic. Three cities reported the pre-school clinic as a part of a clinic for undernourished children, or as a part of a general medical clinic, or as a clinic for indigents only. In three additional cities a non-medical conference is held by the nursing association.

AGENCY DIRECTING CLINIC

As the pre-school clinic service is so generally merely the infant welfare clinic loosely extended to include children over 2 years of age, these clinics will be found to be under similar direction to that already reported for the infant service. Twenty-seven of the 52 were managed by private organizations alone, 17 by the official health agency, 4 by the two combined, and 1 each by the state, by a district health unit, by the state and a private agency together, and 1 by a combination of city, county and private agencies.

HOURS IN CLINIC

For the same reason the proportion of hours expended by the medical and nursing service on the pre-school child cannot be estimated separately with any degree of accuracy. The time expended by the personnel in clinics which were termed infant welfare clinics, which include the pre-school child in most instances, is given on page 129.

ATTENDANCE AT CLINIC

In many clinics attendance figures and the report of new cases enrolled are likewise inseparable from the data for the infants under two. Only 9 cities report both types of information. Thirteen reported attendance alone, which varied from 177 visits per 100,000 population to 4,500 visits and averaged 1,070 visits. The 500 visits required for full score in the rating schedule were obtained in 7 cities. The number of cities reporting is too small to justify presentation in three groups in the usual manner. The new cases of pre-school age children enrolled in clinics were reported in 19 cities and averaged 267 cases per 100,000 population. The extremes were 26 and 775.

NURSING VISITS

Home visits by nurses for the pre-school child were reported separately in 16 cities. The average number of visits per 100,000 population was 1,887. The maximum number was 4,228 and the minimum 187. Seven cities recorded over 2,000 visits, the number required for full credit in the rating schedule.

Sometimes one wonders at the complacency of school medical inspectors and teachers who, year after year, are confronted by all too many children with impairing, correctable handicaps. If they were to exhibit their impatience to the parents of these children they could hardly be blamed. But it was the rare exception to hear the school authorities object to their being supplied with imperfect "material" instead of a reasonably perfect article.

DAY NURSERIES

Day nurseries are found in 61 of the 86 cities. In 9 cities 2 or more nurseries were reported, making a total of 75 nurseries; practically all of them were operated by private or non-official agencies. In 2 instances, however, the city administration cooperated in the management. In one city a large manufacturing concern operated a day nursery. The average daily attendance in each city was approximately 33 children, the number varying from 4 to 170 children. Had the day nursery facilities been used to their full capacity 51 children could have been cared for in this way by the average city, with variations in the individual cities from 10 to 205. The charge made varied from 5 to 50 cents, and no charge was made in special cases. In only 3 instances were kindergartens reported in connection with the day nurseries. While medical supervision was reported in 49 of the 61 cities, this was often of a sporadic or emergency character.

CHILD CARING INSTITUTIONS

Homes for dependent children were found in the majority of the 86 cities, frequently 2 or more. Only 29 cities reported no such institutions. However, in a number of these cities, notably in Massachusetts, the state law has encouraged the boarding out of children in supervised private homes.

In probably half of the 86 cities, state and local departments of public welfare, Children's Aid and Home Societies or other private

agencies are having dependent children, who would otherwise have to remain in institutions, cared for in private families. Mothers' pensions are providing for the care of many half-orphans in their own homes.

In the 57 cities reporting child caring institutions the total number of institutions was 121. Only 40 of the 57 cities supplied figures showing the number of children cared for during 1923. In the 83 institutions in those cities, the total number of children was 8,068, an average of 202 children per city, or 97 per institution.

The wide variety in the age group admitted to the institutions was a striking characteristic. Among the 95 reporting, 40 institutions accepted babies; 44 received children at ages varying from 2 up to 6, the remaining 11 accepted children at various ages up to 16. Children were kept until they were 6 years old in 1 institution; until they were between 7 and 11 in 7 institutions; until 12 in 18 institutions; until between 14 and 16 in 41; until from 17 to 21 in 19, and with no specific limit in 8 institutions. In only 18 of the 95 institutions did the age limit cover less than a 10 year range.

THE APPRAISAL OF THE HYGIENE OF THE PRE-SCHOOL CHILD

The application of the Appraisal Form as given below to the status of the health work for the pre-school child has made possible comparison between the achievement of the 86 cities. This is shown graphically in Chart 29. The most striking thing about the picture it presents is the absence of any of the defined activities in 25 cities, the presence of 19 cities at the bottom of the chart attaining only 20 per cent or less of the maximum score, and only 15 cities rating over 60 per cent. Six cities attained a 100 per cent score. The general conformation of the chart is similar to that depicting the status of venereal disease control.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	68	100	44
Middle Third	29	25	44	12
Lower Third	28	1	12	0
Entire Group	86	32	100	0

In the preceding table the ratings of the cities, expressed as a per cent of the maximum score, are arranged in 3 groups to bring out the wide difference between the average score of 68 per cent attained

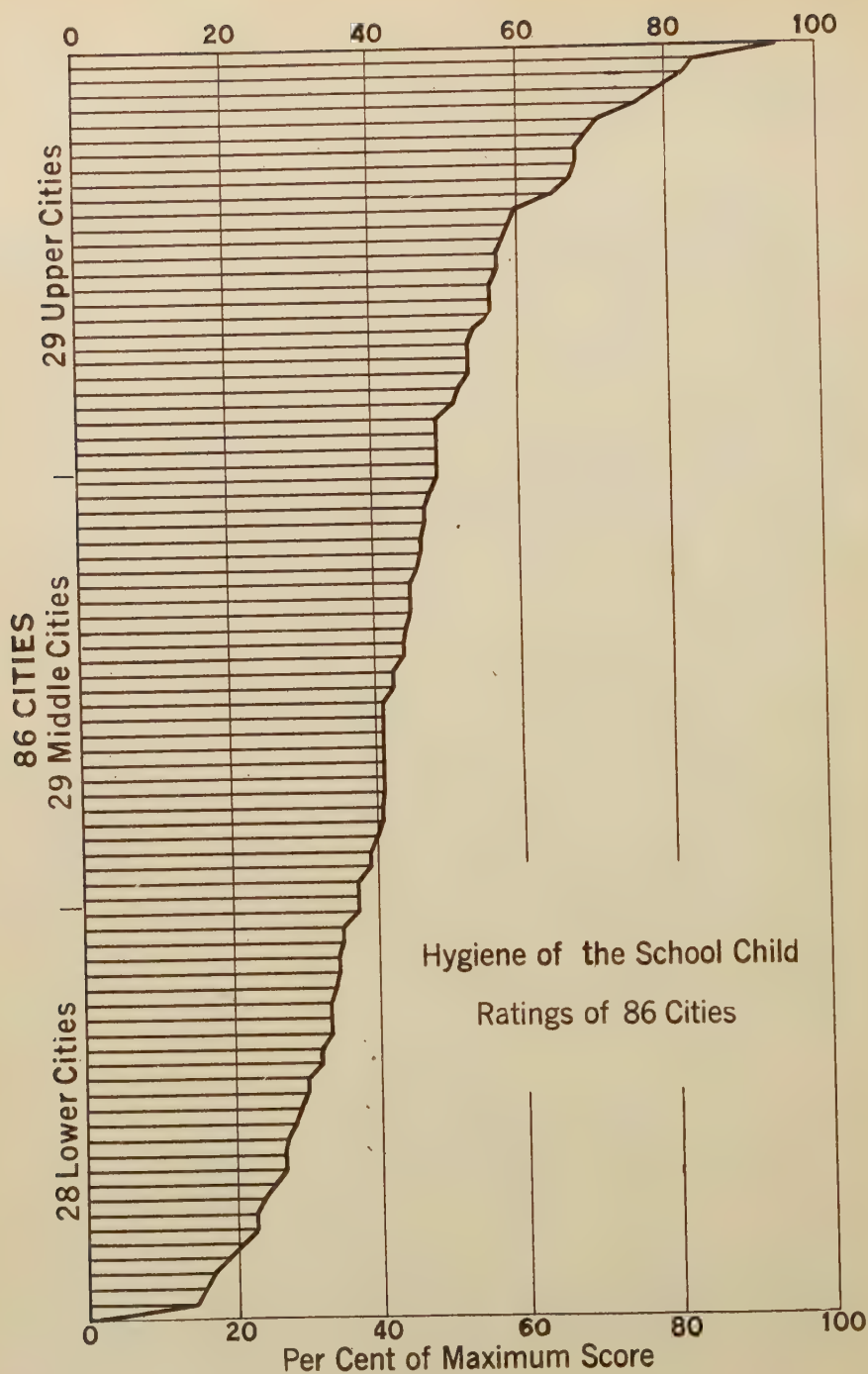


CHART 30

CHAPTER X

THE HYGIENE OF THE SCHOOL CHILD

More than one-seventh of our population are school children; of the child population two-thirds are of school age. The health of the school child is thus a matter that looms large in the public health program of a community. If all parents utilized existing knowledge to protect children against hazards of ill-health, the necessity for organized health protection would be greatly lessened. In our present state of society, however, all parents do not surround children with adequate safeguards to health and by reason of its collective interest in individual welfare, it is a matter of wisdom for the community as a whole to undertake a certain amount of activity in this direction.

THE TEACHING OF HEALTH

Of first importance is the teaching of the child in the normal functioning of the body, acquainting him with matters which promote and weaken health, and encouraging in him a desire to adopt advantageous habits of living.

Public Health Dependent on Individual Health—If public health is to be realized, then individuals themselves must cultivate personal health, and to bring this about they must be instructed in the ways of health. As Professor Winslow of Yale University has so well stated in a recent address, "The keynote of the modern campaign for public health is to be found in *education*." Continuing, he remarks as follows: "In the war against preventable disease, the fight must ultimately be won not alone by the construction of public works, but by the conduct of individual life. The results we are striving for can only be reached by spreading a clear knowledge of the ways in which disease spreads and the ways in which it is prevented, among the mothers who bring up the babies and the men who pay rent in the tenements and work in the stores and factories. With the growth of this conception of education as the dominant motive in the public

Acknowledgement is made to Miss Lucy Oppen and Miss Ethel Perrin of the Health Education Division for aid in preparing this chapter.

health campaign, there has come the need for new machinery through which such education may be accomplished. An elaborate technique of health bulletins, health news service, health lecture bureaus and institutes, health cinemas, health exhibits, and health radiograms has been created to meet this need. These instruments are all of assistance in their twofold object, of securing popular support for the community health program, and of bringing into contact with health clinics of various types the individuals who are in need of their service. Mass methods of this kind form, however, but a first step toward the goal which is in view. Personal hygiene is, after all, a very personal matter. The kingdom of health, like the Kingdom of God, is within you. It is essential to utilize some more direct and more individual agency to carry the gospel of health to the individual in the form adapted to that particular individual's needs; and in the person of the public health nurse has been found the ideal agent for carrying the message to Garcia."

The Teacher as the Apostle of Health—There is, however, another even more "direct and personal agency for carrying the gospel of health to the individual in the form adapted to that particular individual's needs" which Professor Winslow has not mentioned. This agency maintains in the field an army of workers who are in close personal relationship with practically every citizen of this land at some time in his life, for six hours a day for years at a time—and that during the impressionable period of childhood and adolescence. We refer to the school teachers of the country, an army about a million strong, who have the opportunity to color irrevocably the thoughts and the ideals of our future citizens.

The Awakening of Health Consciousness in the Schools—The public schools constitute an agency of tremendous potentiality for carrying the message of health to every individual. In the past, the schools have worked side by side with the public health agencies, but there has been between them little realization of common ideals and purposes. Public health administrators have changed their emphasis from police control to active health promotion through education. Similarly the educators of the country have passed through a period of complacent satisfaction with sanitation of the school plant to a realization that the schools have a distinct responsibility in the active promotion of health through educational means. The lines of thought, formerly parallel and isolated,—of public health and public school people, have begun to converge.

The Movement for Health Education in the Schools—The new movement for health education in the schools is a distinctly forward-looking educational step which, though formally endorsed and approved by the great body of educators in their official discussions and committees, is still in its developmental stage. School people are traditionally conservative, and for many of them the mandates of the officially approved health education programs are accepted without question.

The new movement is an educational effort which definitely includes a more comprehensive objective than the mere prevention of disease and physical impairment. It is a movement for the definite promotion of what its exponents are fond of referring to as "positive health," "abundance of life," of "that quality of life which fits the individual to live most and serve best." It is in its essence concerned with an optimal development which will show forth the highest potentialities of each individual. It takes account of the individual pupil, not only with regard to his personal health, but as a future citizen who must be definitely prepared for participation in the responsibilities of citizenship with regard to public health activities. It recognizes that both individual and public health are purchasable, and that the individual citizen must be prepared to see the value of the purchase and must be trained in willingness to pay the price in the form of his personal health standards and practices on the one hand and in his unqualified support of proper community health measures on the other.

The Great War forced upon us with unescapable logic the fact that the end products of our educational system, our young men and our young women, had in large proportion marked deficiencies. It was a shock to read of the enormous number of rejections from army service of boys in their teens and young men in their twenties because of flat feet, poor eyesight, weak hearts, tuberculosis and other causes. The education which had purported to train them for life's responsibilities was revealed as glaringly inadequate, and the educators were forced to turn over a new leaf, to develop a new type, the groundwork of which may be called health education.

Present Day Developments—Today, the development of health is recognized by all educational leaders as one of the primary objectives of all education. Dr. F. G. Bonser's statement of the aims of education is typical:

1. Health—maintaining life and keeping well.
2. Practical efficiency—using the tools and conventions of civilized life and the technique of a vocation.
3. Citizenship—cooperation in the regulative processes of social control and civic and social enterprises.
4. Recreation—using leisure time for enjoyment and enrichment of the higher life.

Dr. Franklin Bobbitt has placed the development and maintenance of one's physical powers as of first importance and the development and maintenance of one's mental efficiency in eighth place, among the ten objectives for a good curriculum.* Most significant of all, the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, has given health unusual emphasis by the issuance of a report on health education in the schools, which may be looked upon as a guide-map in this field.**

PHYSICAL EDUCATION

A large factor in health is muscular activity. Muscles grow, as a result of use. Metabolism is increased, lungs and heart are developed, by physical activity. The spirit of play among children provides the natural channel by which physical education may enter the school curriculum. The child that learns to play fair, and in so doing acquires a liking for group and individual competition, is bound to be a better and healthier citizen. The school should teach these things to children and should provide space and equipment for the purpose.

THE PHYSICAL EXAMINATION

While it is essential that the child should be taught healthy living by the teacher, it must be recognized that individual health cannot be maintained in all cases solely as a result of muscular activity or the possession of correct attitudes, good habits, and wide knowledge. In spite of these attributes, the body frequently goes off on a tangent, being influenced by hereditary impulses and by anatomical and physiological perversities. Defective eyesight, troublesome tonsils, adenoids, weak hearts, bad teeth, mental and social maladjustments and numerous other deficiencies do occur in the school child and they

* *The Curriculum*, Bobbitt, J. F., Houghton, Mifflin Co.

** Health Education, Report of the Joint Committee on Health Problems in Education, Elizabeth MacCormick Memorial Fund, Chicago, Ill.

cannot be taught "out." Their correction requires the attention of the physician, the dentist and the psychologist.

The community can well afford to provide medical examination or inspection for its school population primarily because of its educational effect in revealing to the parents and child the existence of such handicaps and thus acquainting them with the possibilities of preventive medicine and of the value of the medical examination in their years to come. The community profits immediately from this work, because the removal of physical handicaps frequently means less absence from school, less repeating of grades, and better all around school work.

PROTECTION AGAINST COMMUNICABLE DISEASE

The above activities may possibly be considered as matters of health advancement or investments for the future. There is another health activity for the school child that is distinctly for health protection, or health preservation. This is the control of communicable disease. Children come into intimate contact with each other in the school. For the protection of all classes of the population, it is eminently desirable that attention be given to the detection of incipient communicable disease and the prevention of its spread. If the teacher is conversant with the initial symptoms of children's diseases, she can either send the child with suspicious signs home with a note to the parents, or else refer the child immediately to the school nurse for advice as to course of action. The early segregation of the infectious child is one of the best means of preventing the spread of infection to others.

SCHOOL SANITATION

There is another field of health activity which is clearly a community responsibility. This is the sanitation of the school plant. There should be running water for washing and drinking. There should be soap and towels. There should be toilets and these should be kept clean. There are the questions of light and heat and ventilation and seats adjustable to the size of the child. There are other questions concerned with the school environment which must be dealt with in a manner that will promote and not detract from the school child's well being. The child is compelled to go to school, and it is not right that the environment prepared for him should be other than conducive to his health.

The findings of the survey will be treated with these points in mind. It will be seen that the sanitation of the school plant is receiving considerable attention. Health education is new and the methods are varied, but it has gained a foothold in the school system and is growing by leaps and bounds. Physical examinations are quite universal but standardization is badly needed. All in all, health activities in the school are well recognized as a part of the American community's health program.

RESPONSIBILITY FOR SCHOOL HEALTH SUPERVISION

The supervision of health work for the school child in the 86 cities is a divided responsibility, the board of education, the department of health and other agencies each being identified with it either independently or jointly. The teaching of health is almost always within the board of education, although some of this work is done by nurses of the health department. The inspection or examination of school children is conducted by the board of education in 55 cities, by the department of health in 22, by the department of health and the board of education jointly in 2 cities, by the board of education and the local branch of the Red Cross jointly in 1 city, by the Red Cross alone in 1 city, and by the county health unit in 1 city.

PERSONNEL

In addition to the teachers, the personnel dealing with the health of the school child includes physicians, nurses, dentists, dental hygienists, nutrition workers, directors of health education and directors of physical education.

Physicians in school work are for the most part on a part-time basis. There are but 11 cities with full-time physicians, in 6 instances on the staff of the Department of Education, and in 5 with the Department of Health.

Nurses are employed for full-time, but frequently a nurse's work is divided among several activities such as tuberculosis and communicable disease, in addition to school work. Seventy-five cities have nurses devoting full-time to school work. They are wholly under the supervision of the department of education in 56 cities and under the health department in 14. In 3 cities there are nurses from 2 different agencies, and in 2 cities the nurses represent private agencies.

There are 13 cities employing full-time dentists. Part-time den-

tists are found in 35 cities. Dental hygienists devote full-time to school work in 10 cities. In 7 cities there are dental hygienists on part-time.

There are 13 cities with full-time nutrition specialists, this activity being supported by the department of education in 12 cities and by the Red Cross in the other.

Educational departments employ 11 full-time and 1 part-time supervisors of health education. Departments of health have supervisors in 2 cities and the Red Cross is in charge of this work in 1 city.

Full-time supervisors of physical education are found in 69 cities, in every case being employed by the department of education.

The number of cities with special personnel engaged in health supervision, whether in the department of health, the department of education or elsewhere, is shown in the following table:

	Dept. of Health		Dept. of Education		Other	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Physicians	5	15	8	45	0	1
Nurses	16	9	59	7	3	1
Dentists	4	12	7	22	2	1
Dental Hygienists	2	1	8	4	0	2
Nutrition Specialists	0	0	12	2	1	0
Supervisors of Health Education	2	0	11	1	1	0
Supervisors of Physical Education	0	0	69	0	0	0

It should be understood that the numbers in the table are not mutually exclusive, as more than one organization takes part in this work in some cities, and there are instances of both full-time and part-time personnel in the same city.

There is no city in the 86 without representation in at least one branch of school health work. There are 69 with school physicians either full- or part-time, 84 with school nurses, 45 with school dentists, 17 with school dental hygienists, 15 with supervisors of health education and 69 with supervisors of physical education.

The actual number of professional people within a single city varies widely as to nurses and part-time physicians. Gary and New Britain each have 2 full-time school physicians. No other city has more than one. Of the cities with part-time physicians, 23 have 1; 12 have 2; 7 have 3; 11 have 4; 3 have 5; 1 has 7; 2 have 8; and 1 has 21, who are employed only for the first few weeks of the school year.

Full-time nurses on school work vary from 1 to 7, the cities having this latter number being Binghamton and Wheeling. Atlantic City and Kenosha have 6, and Augusta, Rockford, Springfield, Illinois, Newton, Highland Park, Lincoln, Passaic, and Mt. Vernon 5 each.

The proportion of school children for each nurse employed on school health work is as follows:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	28	1,795	2,205	996
Middle Third	27	2,752	3,304	2,228
Lower Third	27	5,430	19,918	3,396
Entire Group	82	3,285	19,918	996

Two cities have no school nurses and 2 cities could give no estimate of the time spent on school work.

HEALTH EDUCATION

INSTRUCTION OF PUPILS AND TEACHERS

Since the planners of the survey realized that one accepted method of teaching health is by the correlation of health with other subjects, one question dealt with this phase. But they found that it is an extremely difficult thing to measure the effort that these 86 cities are making to give children health knowledge, habits and ideals. Twenty-four cities state that they are correlating health education with their studies in 100 per cent of their schools. Undoubtedly this method should be used and intensive studies are being carried on in this field.* Nevertheless, unless it is carefully guided, this can be a very casual way of presenting the subject. There are 66 cities which report a definite course in health education. In 47 cities the course starts in the kindergarten or first grade, and in 19 cities it begins in one of the next four grades. There is perhaps no other subject in the curriculum which is treated in this hit-or-miss fashion. Although receiving the proverbial step-child treatment, health education is at the same time set down as a primary objective in education. Eighty per cent of the superintendents expressed themselves as in favor of health education, though this did not necessarily indicate that they were actively working for it. Following is a summary of some of the devices employed in connection with health instruction.

* East Orange, New Jersey is making a detailed study.

Posters.—The simple device of making health posters has been resorted to in health education for the purpose of stimulating interest, and it is encouraging to know that only 10 cities do not find the making of posters helpful. Unfortunately some enthusiastic poster makers have found so much satisfaction in their efforts that they point with pride to their covered walls as conclusive evidence that the children are far along the road of health.

Weighing and Measuring.—The weighing and measuring of children can well be used as an initial wedge of interest. Sixty-one cities said that the height-weight-age records were considered a part of the health program. This is encouraging evidence of an interest in positive health. Nine cities reported that weight-height-age records were posted in 100 per cent of their schools. Thirty-five said that no records were posted. Seventeen cities reported that all of the records were entered by the teachers. From an educational point of view this is better than to have it done by the nurse. Thirty-five cities reported entries in weight-height-age records up to date. Twenty cities reported none up to date.

Interest in the subject of nutrition has been greatly stimulated by the weighing and measuring of school children. It is rather remarkable to find that all school buildings are equipped with scales in 48 cities. Twenty-eight cities have scales in at least some of their schools. Seven cities report no scales and in 3 the record of this fact could not be ascertained positively.

The weight record has educational value when sent home to parents on the report card. The practices with respect to weighing are indicated below:

Frequency	Weighing	Number of Cities Weight Record Sent Home
Monthly	23	13
Bi-monthly	5	6
Three times a year	4	4
Twice a year	13	8
Annually	24	10
Irregularly	7	4
Not at all	7	35
Information unobtainable	3	6

Nutrition.—Through the study of the normal child, it has been determined that the malnourished group need more frequent feeding than the usual three-meals-a-day routine. The result of this finding

has been that, through the mediation of the physician, or nurse, or some child welfare organization, mid-morning and afternoon luncheons have been provided in some cities for school children belonging to this group. From this practice there developed the idea that all pronouncedly underweight children, whether showing other symptoms of malnourishment or not, should receive this same attention. The next step was inevitable, that is of recognizing that every child is better off for having a drink of milk, or soup and crackers or cocoa, during a mid-morning or afternoon period.

We find from the survey that 69 cities serve a morning lunch in at least 1 school and 8 cities serve both a mid-morning and a mid-afternoon lunch. Only 15 cities lay no claim to this service. Twenty-eight consider this to be a part of the school health program and 57 do not. The reply to this last question may be regarded as an expression of opinion by the administration.

Fourteen cities have a supervisor of nutrition and 11 have a supervisor of health education. Just how far these supervisors carry their work into the field of positive health for all, the story does not tell. There is no doubt of the type of work covered by a supervisor of art but the duties of a nutrition or health supervisor have never been defined and as a matter of fact they have quite different meanings in different parts of the country. In 34 cities there are organized nutrition classes which carry on instruction in health education for the underweight children. It is assumed that after they have experimented sufficiently and discovered the value of this work to the sub-normal child, it will gradually extend to the masses instead of being limited to the chosen few.

Health Crusade.—The National Tuberculosis Association has aroused much enthusiasm among school children for the performance of health habits through the Modern Health Crusade. It was in use in 24 cities but it was not possible to discover through records, to what extent.

Mothercraft Classes.—Another outside channel of health education comes through mothercraft classes. Fourteen cities reported the presence of such classes. They usually reach a very limited number of girls and an up-to-date home economics course presents the same phases of child care and reaches a greater number of pupils.

Interest in Physical Examinations.—Teachers are also extending their interest to the physical examination of the child. This is encouraging for in the past this has not been looked upon as of concern to the teacher. The more knowledge the teacher has of the physical condition of her pupils the better will she be able to encourage in them a health consciousness and the more intelligently will she discuss her pupils with the parents. There is reason to believe that this will aid in the correction of physical defects. In 45 cities the physical records are kept in the hands of the teachers, and in 6 other cities the records are accessible to teachers.

A thorough physical examination of all children is our firmest foundation for health teaching and the teacher needs to take a responsible part in this examination. It appears from the records that in 3 cities the teacher alone assists the physician and that in 12, both the teacher and the nurse assist him. If this assistance consists only of taking records and marshalling the children, it has very little bearing, if any, on health education. But if the teacher uses it as a direct means of learning the physical condition of the children whom she sees every day, it can be a most significant part of her health education program and can make her a better teacher in every way.

Professional Qualifications of Teachers.—In advocating the teachers' participation in the health program, it is presumed that the teachers have some knowledge of the subject themselves and that provision should exist for equipping teachers for this specific task. This training, of course, must be adjusted somewhat to fit in with the previous training of the teacher because cities vary widely in their professional requirements. Fourteen cities report that all of their teachers are either normal school or college graduates. At the other extreme there are 7 cities where less than half of the teachers possess this educational equipment. The following data on professional training of teachers is of interest:

Per Cent Graduates of Normal Schools or Colleges	Number of Cities
80 to 100	43
60 to 79	17
40 to 59	12
Less than 40	3

In 1 city 99 per cent of high school teachers, but only 66 per cent of grade school teachers have normal school or college degrees.

Training Teachers to Teach Health.—Until recent years no special prominence has been given to health education in teacher training institutions. Hence, even among the well trained teachers, there is a need for the study of this subject which has so recently changed from the negative to the positive emphasis. The training of teachers in the field of health education is handled in various ways. Twenty-seven cities offer extension courses on health and 19 provide lectures on how to teach health. Fifty-eight cities provide the teachers with health pamphlets and charts for use in the schoolroom.

There is excellent work being done in many teacher training institutions toward reaching definite health standards, but there still lies the responsibility of providing an adequate personal health program for teachers in service. This involves teaching schedules, rest rooms and recreation. The teacher is the pivot of the whole health program and unless she is well herself, unless she has preparation for health teaching, unless she has a working share in the health examination of the children and its follow-up, she cannot act the part assigned to her. Her first responsibility then is to justify to the children the value of leading a rational existence, physically, mentally and socially.

HEALTH HABITS OF 35,000 SCHOOL CHILDREN

Description of Inquiry.—The major portion of the survey of the 86 cities dealt with organization, type and quantity of health activity conducted. There was a desire to go a step further and ascertain some of the results of health work. The opportunity was afforded through direct inquiry of the school children as to certain daily habits of life. It was made a part of each surveyor's task to visit the grade schools and in addition to the gathering of facts about the school building to submit a list of questions to the children in at least 1 of the fifth grade rooms in each building. As it was impracticable to interrogate the entire school population, all those in a single grade would be likely to give a fair cross section of the city. Fifth grade school children are old enough to comprehend the questions asked of them.

In anticipation of there being in some cities too many fifth grade rooms for the surveyor to cover conveniently, a uniform plan was first followed so that, in cities with over 9 schools with fifth grade rooms, the surveyor would make a selected list first by writing the names of the schools in alphabetical order and then choosing every other one or every third one until he had secured from 8 to 10 schools. This

plan was carried out to protect the surveyor from the possible charge that he had selected good schools in one city and poor ones in another. Later this was modified to the extent that if this selection unduly favored certain districts of the city a change was arbitrarily made so as to make the selection fairly representative of the population. Altogether replies were received from over 35,000 children or an average of about 410 to a city.

The actual figures are:—

Total number of children questioned	35,349
White, public schools	30,178
White, parochial schools	3,672
Colored	1,499

With but very few exceptions the questions were asked directly by the surveyor in person. He would explain that the purpose of the questions was to find out how children live. The best source of information was themselves. The papers were not to be signed so the child did not need to worry over being checked up on any reply. Sheets were passed out and the surveyor first read over all the questions before the children began their answers. Then each separate question was read slowly and the children recorded their answers. Ample time was given for a reply. The chief surveyor had previously conducted the questioning with each surveyor in order to secure uniformity in method.

Certain supplementary explanations accompanied each question such as the following:

“What time did you go to bed last night? I don’t want to know what time mother suggested that you go to bed, but the time you really went to bed.”

“Have you been to a dentist in the last year? Think of the time since the middle of March a year ago. Think of March, April, May and so on around till now. Have you been to a dentist in that time to have a tooth filled or your teeth cleaned or a tooth pulled?”

The type of question was designed especially to facilitate the child’s answer. If the question had been, “what time do you go to bed,” there was forced upon the child the difficulty of thinking back over many nights and estimating an average. This is difficult even for

the adult. By asking a specific question the child is saved this searching of his memory. It is much easier for him to remember a recent event than to strike a fair average of past events. Last night may have been unusual and not representative for an individual child. On the other hand this is probably balanced by another instance at the other extreme. It was believed that a fair estimate of the habits of the group would be secured from the average of these individual experiences.

QUESTIONNAIRE

	City
	Name of school.....
1. What time did you go to bed last night?	}
2. What time did you get up this morning?	
3. Write down each thing you ate for breakfast this morning	
4. What did you eat for lunch this noon?	}
5. Did you play out doors after school yesterday?	
6. What did you play?	.....
7. Where did you play?	a. In the street.....
	b. On the school playground.....
	c. In a public park or playground.....
	d. In your own or a neighbor's yard.....
	e. In the house.....
	f. In a gymnasium.....
8. How many cups of coffee did you drink yesterday?	.....
9. How many glasses of milk did you drink yesterday?	.....
10. Did you have an all-over bath last week?	.....
11. Did you brush your teeth yesterday?	.....
12. Have you been to a dentist in the last year?	.....
13. Have you ever been vaccinated against smallpox?	.....
14. How many days were you out of school last week because you were sick?	.....
15. Was there a baby born in your family in the last six months?	.....

Check the place
or places

The question sheet was worked out most carefully prior to the survey, attention being given to the wording so as to prevent misunderstanding. In view of the doubt in the minds of some as to the accuracy to be expected from school children in questioning of this kind, several eminent educators and specialists in educational measurements were consulted. It was the consensus of opinion that from 80 to 90 per cent accuracy could be expected from the procedure outlined. Several checks were made in the course of the survey which substantiated this estimate. In one case a school principal doubting the validity of the method repeated the questioning himself an hour later. A tabulation of the 2 sets of replies was remarkably close, an

agreement of 95 per cent being reached on all but 1 question. In this exception the principal had put additional emphasis in asking about brushing of teeth. He explained that he wanted to know who brushed their teeth yesterday, not the day before yesterday or the day before that, but yesterday. His affirmative replies were about 80 per cent of those secured by the surveyor. Other checks and comparison of results with other known facts indicate that a high degree of reliability is to be placed on the replies.

Difficulty was encountered later in tabulating all of the replies, and the questions on diet are yet to be analyzed completely. The last question was included to supply information with which the surveyor could check the birth registration in the city.

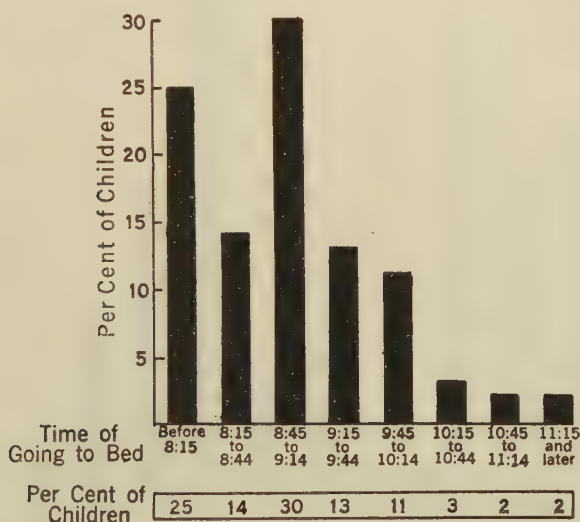


CHART 31

Sleep.—The time of going to bed for these 35,000 children covers a range of from 8 o'clock to nearly 12. The hour most common is 9, the actual median being 8:55. The distribution by half hour intervals is pictured in the chart.

We may express the retiring habits of fifth grade school children simply by stating that during the period from January to June, 69 per cent are in bed before 9:15. There are only 7 per cent who go to bed at 10:15 or later.

It is of particular interest to note the retiring hour in different cities. Newton shows to best advantage in that 93 per cent of the children go to bed before 9:15. Fresno is second with 89 per cent. Quincy is third with 87 per cent.

In general it may be said that the earlier the retiring hour the better for the child, it being assumed that early retiring means longer sleep. This is not necessarily the case. The really important matter is long hours of sleep which is discussed on the following page. The presentation of retiring hours and hours of arising is more for the purpose of general information and with the object of interesting communities in making checks for themselves from which data may be

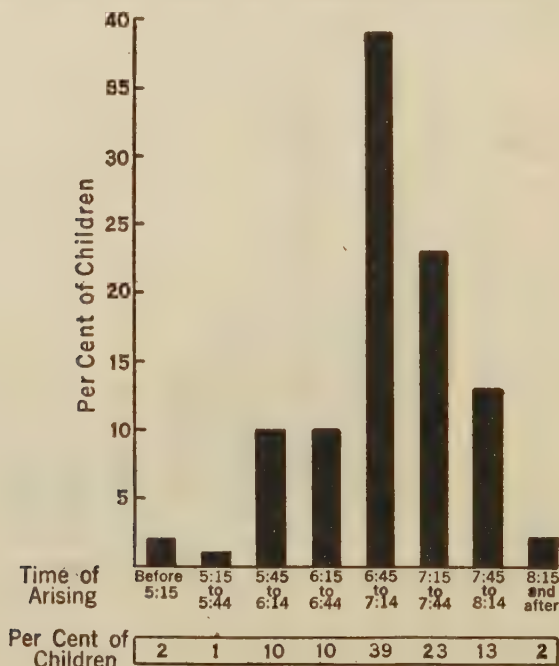


CHART 32

derived that will be of assistance in the local health education program. Daylight saving during May and June is apt to give the cities surveyed at this time a different retiring and rising hour. No correction has been made for this.

The most common hour of arising is around 7 o'clock. Thirty-nine per cent of children rise from 6:45 to 7:14. The median for the entire group is 7:06.

The earliest risers are the children of Chattanooga, median hour 6:10, Montgomery, median hour 6:19, and Springfield, Ohio, median hour 6:42. The last ones up in the morning are the children of Butte, median hour 7:41, Wheeling, median hour 7:34, and Hoboken and Atlantic City, median hour 7:29.

The median length of sleep for the entire group is 10 hours and 11 minutes.*

Regarding sleep, it is generally conceded that an 11 year old child (which is probably the nearest average age for fifth grade) requires at least 10 hours of sleep.** Among these 86 cities, 72 per cent of the children are shown to have 10 hours or more sleep, while but 2 per cent have less than 8 hours sleep. The distribution is pictured in the following chart.

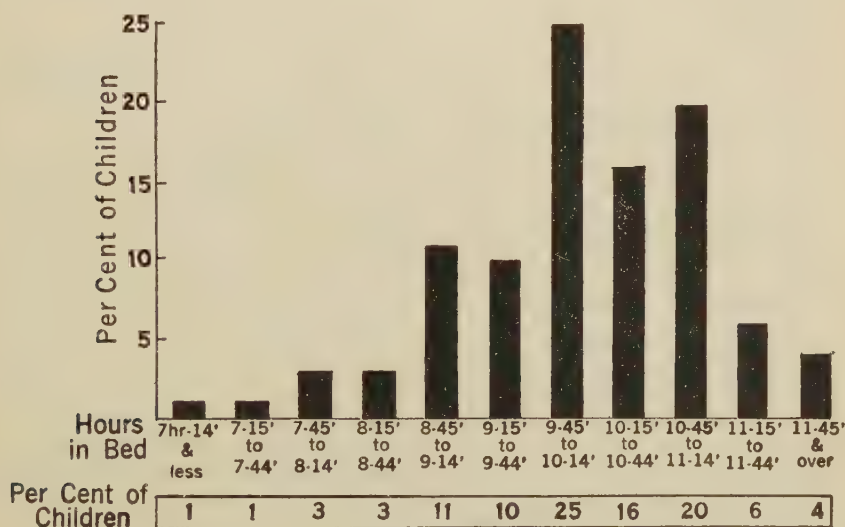


CHART 33

The children of Berkeley have the longest hours of sleep as indicated by the median of 10 hours and 55 minutes. Expressed as the percentage of children getting 10 hours or more of sleep, Salem and Newton stand first, each with 91 per cent; Berkeley is second with

* This will be found to differ from the figure given in a preliminary report which has since been corrected.

** "Sleep" by Harriet Wedgwood, Health Education Series No. 12, Bureau of Education, Washington, D. C.

90 per cent, Quincy third with 89 per cent and Stockton fourth with 88 per cent. Massachusetts and California children vie with each other for the honor of the best night's sleep.

Long hours of sleep are indicated to be least common in Huntington and Charleston, with only 45 per cent of the fifth grade group getting 10 hours or more sleep. Tampa's percentage is 49 per cent and McKeesport and Montgomery 51 per cent.

The figures for Haverhill, Butte and Lakewood indicate that there is no fifth grade child there who gets less than 8 hours sleep.

Dietaries.—The analysis of the items shown in the breakfasts and lunches has been omitted in this report. At best the replies reveal

THE BREAKFASTS OF SCHOOL CHILDREN

Food Group	Kinds of Food	Per cent Frequency of each food item in 2,042 Breakfasts
I. Milk, Chocolate or cocoa	Milk to drink	42
	Milk on cereal only	8
	Chocolate or cocoa	15
II. Coffee or Tea	Coffee	25
	Tea	5
III. Fruits	Fresh Fruit	13
	Cooked Fruit	2
IV. Chiefly Protein Foods	Eggs	30
	Meat	8
	Bacon	5
	Sausage, hash, fish, cheese	2
V. Chiefly Starchy Foods and Sweet Foods	Bread	76
	Cereals	35
	Sweets	18
	Pastries and Cake	10
	Starchy Foods	7
	Pancakes and waffles	5
	Preserved Fruits	4
	Other things	2
	Beverages	1
VI. Fatty Foods	Butter	32
	Cream	2
	Peanut Butter	0.3

variety, but not quantity of food. It is impossible to judge whether the meal is adequate solely from this information. It would have been better to have secured information on the third meal of the day also, but this was omitted to avoid confusion of the child in his replies. The absence of this information, however, makes it impossible to determine whether the day's dietary has been fairly complete. Essential items such as vegetables or fresh greens not included in the noon meal may have been consumed in the evening meal, of which information is lacking. Several analyses have been made, however, of the breakfasts. In the first instance a tabulation has been made of the food eaten by 2,042 children representing one schoolroom in each of 52 cities. These cities are the earliest visited and are scattered all over the country. In this group only 38 children reported having had no breakfast. Items are classified under 6 headings, viz.: I, Milk or Chocolate or Cocoa, II Coffee or Tea, III. Fruits, IV. Chiefly Protein Foods, V. Chiefly Starchy Foods and VI. Fatty Foods. This information is set forth in the table on the preceding page.

There are several comments that are suggested by this list. A fair proportion of children have either milk or chocolate or cocoa for breakfast. This group of items is more common than coffee or tea. Fresh and cooked fruits seem somewhat neglected with only 15 per cent of children including these items. The American child certainly is not a confirmed meat eater at the morning meal. Eggs are the most common protein food. Bread is truly the staff of life in so far as it is the most common constituent of these breakfasts. Cereals are used less frequently than one would expect. Pastries and cakes and sweets are perhaps unnecessarily common. Summing up this table the absence of fruit would seem to represent the greatest deficiency in the American child's breakfast.*

Considering the entire 86 cities the proportion of children coming to school without breakfast is very slight. The median is 1.2 per cent for no breakfast and 1.9 per cent for an apparently unsubstantial breakfast, that is with liquid only or liquid and fruit. The highest figure reported for any individual city was 4.9 per cent without breakfast and 5.6 per cent for an unsubstantial breakfast.

* "Diet for the School Child" by Lucy H. Gillett, Health Education Series No. 2, Bureau of Education, Washington, D. C.; and "What Children of Various Ages Should Eat," by Lucy H. Gillett, in the Child Health Library published by Robert K. Hass, Inc., New York City.

Milk Drinking.—Special tabulations were made of milk and coffee drinking among the 35,000 children. This has been expressed in several ways:

Milk

Per cent drinking one pint or more	58.
Per cent drinking one quart or more	16.
Per cent drinking no milk	22.
Median glasses of milk consumed a day	1.4
Median glasses of milk consumed a day by those who did not drink coffee	1.8
Median glasses of milk consumed a day by those who drank two or more cups of coffee	0.4

Coffee

Per cent of children drinking one or more cups of coffee	39.
Per cent of children drinking more than two cups of coffee	6.

Daily amounts of milk recommended for children vary between 1 and 2 pints. The significant point in the above table and one of

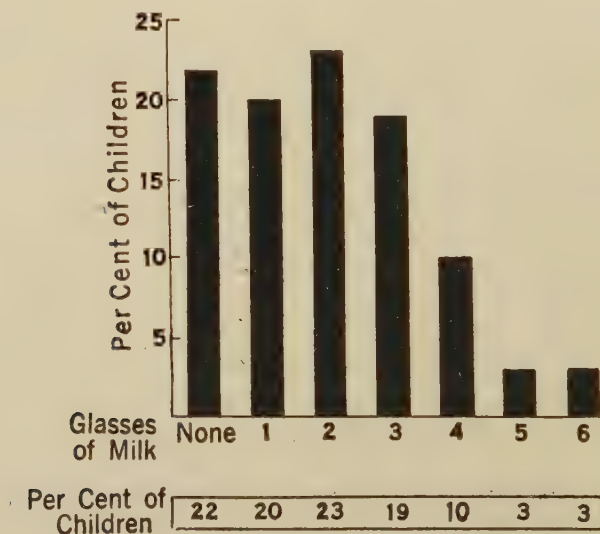


CHART 34

considerable public health importance is that there are 42 per cent of fifth grade school children drinking less than a pint of milk daily and that as many as 22 per cent report drinking no milk at all. This is a matter that cities may well investigate further. Judged by the per cent of children drinking a pint or more of milk the 5 cities with the best records are:

East Orange	82.
Kalamazoo	79.
Newton	76.
Salem	75.
Holyoke	74.

The smallest milk consumption judged on the same basis is found in the following cities:

Charleston	30.
Portsmouth	40.
Roanoke	42.
East St. Louis	42.
Augusta	45.

Grouping the cities by section of the country and averaging the percentages in each city, the greatest milk consumption is found in the Pacific and West North Central sections, the least in the South Atlantic. The per cent of fifth grade children drinking 1 pint or more of milk in the different sections is: Pacific 64, West North Central 64, New England 63, East North Central 61, Middle Atlantic 59, Mountain 58, West South Central 57, East South Central 54, South Atlantic 49.

Coffee Drinking.—There are several objections to children drinking coffee and tea, and for that matter even cocoa. The most serious objection is that coffee crowds milk out of the diet. The data on hand are quite conclusive on this point. For instance of the 21,082 children who drank no coffee, 84 per cent drank milk. Of the 13,304 who drank coffee only 66 per cent drank milk. Expressed in another manner the median glasses of milk consumed by the children who did not drink coffee was 1.8; of those who drank 2 or more cups of coffee 0.4. In other words those who drank 2 or more cups of coffee consumed only from one-fourth to one-fifth as much milk as the non-coffee drinkers.

It is felt that this aspect of coffee drinking among children is of greatest concern from a public health standpoint. This objection to coffee is applicable as well to coffee substitutes and tea and cocoa unless cocoa is made with milk. In short a hot sweetened drink is a competitor of milk. To the degree that it supplants milk and thus deprives the child of the necessary food elements which milk provides, it is objectionable.

Coffee drinking is a fairly well established custom among fifth graders. Thirty-nine per cent of 34,386 children drink coffee (drank coffee on the day previous to the questioning). This figure is made up of 24 per cent drinking 1 cup, 9.0 per cent drinking 2 cups, 4.4 per cent 3 cups, and 1.6 per cent 4 or more cups. Altogether then about 15 per cent of fifth grade school children are indicated to be drinking 2 or more cups daily. The figures are given with reference to coffee as this is much the more common of this group of beverages.

The cities which have the smallest per cent of child coffee drinkers as indicated by the replies of fifth grade children are:

Newton	9 per cent
East Orange	10 " "
Pasadena	14 " "
Haverhill	18 " "
Kalamazoo	18 " "

The cities where coffee drinking is most prevalent among fifth grade children are:

Perth Amboy	74 per cent
Hoboken	71 " "
Hamtramck	70 " "
West Hoboken	69 " "
Cicero	69 " "

Bathing.—On the basis of the replies to the question "Did you have an all over bath last week?" it appears that the American school child is a fairly clean individual. Ninety-two per cent of children responded affirmatively to the question. The lowest percentage reported for any one city was 76. In fact 69 out of the 86 cities show percentages of 90 or above.

Brushing Teeth.—The brushing of the teeth 1 or more times daily ought to be universal. The children made answer to the question

which read, "Did you brush your teeth yesterday?" Sixty-eight per cent of children answered in the affirmative. This is not as good a showing as we might expect.

Montgomery had the largest number of affirmative replies to this question. Its percentage together with those of other cities with high standings, follows:

Montgomery	87 per cent
Winston-Salem	86 " "
Tampa	86 " "
East Orange	84 " "
York	83 " "

The lowest record for an individual city was 45 per cent.

Visiting the Dentist.—Fifty-three per cent of children stated that they had visited a dentist within the past year. The extremes for individual cities are 84 and 27 per cent. Annual or semi-annual visits to the dentist show that the people know that in this way they save pain and money. Severe mouth disorders are avoided when dental attention is given either before the trouble appears or while the trouble is slight. Regular visitation is thus looked upon favorably as a public health measure. Preventive dentistry is evidently best appreciated in the following cities, as indicated by the percentage of fifth grade children visiting the dentist during the last year.

East Orange	84 per cent
Atlantic City	79 " "
Newton	78 " "
Springfield, Ill.	77 " "
West Hoboken	75 " "

Dental visitation is least frequent in the following cities:

Terre Haute	27 per cent
Montgomery	29 " "
East St. Louis	32 " "
Bay City	36 " "
Springfield, Ohio	36 " "

An interesting fact in this summary of health habits among fifth grade children is the preëminence of Newton, Massachusetts. For 5

years the assistant superintendent of the schools of Newton, has made health habit practices a vital part of the whole school program. The weight-height-age records are used as the starting point, and positive, joyous health for all children is the goal. The work is carried on through the classroom teacher and through the cooperation of the parents.

The school health habit questionnaire shows that the Newton children go to bed earlier, that Newton has the smallest percentage of children who drink 1 or more cups of coffee, that it stands third in the proportion of children drinking a pint or more of milk a day, and that this city is one of the 3 having the highest median in number of glasses of milk consumed a day. Although Newton does not lead, it stands high in the matter of bathing, in brushing the teeth, and in visiting the dentist. In Newton only two-tenths of one per cent of children come to school without breakfast and only 2 per cent have an unsubstantial breakfast. Ninety-three per cent are vaccinated. This would seem to point to the fact that its methods of translating health knowledge into actual practice have proved effective. The cities which stand closest to Newton in these matters are Berkeley, East Orange and Malden.

Play.—Questions were asked as to the extent of outdoor play, the use of playgrounds, and the kind of play. These facts were most difficult to analyze. The state of the weather has a considerable influence on whether the child plays outdoors or indoors. It is thus impossible to compare cities in this respect without having weather data and even then an interpretation is difficult. Eighty-five per cent replied that they had played out of doors the previous day. Inclement weather might easily have accounted for the other 15 per cent remaining indoors for play.

As to place of play the replies of over 34,000 children indicate that the "yard" is the favorite spot. Thirty-one per cent of children evidently go home from school and have sufficient yard space available around the home to serve as a playground. In this respect the children in these smaller cities are very fortunate. In the largest cities where apartments and tenements abound playing in the yard is a pleasure reserved for the few.

Fifteen per cent use the street and sidewalk as a playground. This is a fact of some importance in the safety campaigns. Play-

ground or park claimed about 10 per cent of children. The actual percentage groupings of different play places are:

	Per Cent
Did not play	9
Indoors—one place	6
Indoors—two or more places	2
Outdoors—two or more places	12
Indoors and outdoors	15
Playground or park	10
Yard	31
Street or sidewalk	15
Unclassified	0.5

It appears from the replies of 33,985 children that 78 per cent engage in active play which is as it should be. Play in which children sit quiet is relatively rare. The various proportions are:

	Per Cent
Did not play or work	4
Active play	78
Inactive play	6
Worked	6
Worked and played	2
Studied	2
Went to movies	0.5
Gymnasium (11 children)	0
Unclassified	2

Several conclusions are suggested by these data. The first is that extremely few are spending their time after school in the movie theater. The actual number was 176. Another surprising fact is that only 11 children spent time after school in a gymnasium. Children of this age continue to have little obstruction placed in the way of free play. Only 6 per cent (5.8) stated that they worked after school while but 2 per cent (1.7) reported that they both worked and played. Altogether the play habits of fifth grade children appear to be in a favorable state.*

The question "What did you play?" provoked a display of answers that is astonishing in its variety. Games are named of which many of us have never heard. As samples of active play recorded

* For amount of play time required for the development of normal children see "School Program in Physical Education," by Dr. Clark W. Hetherington, published by the World Book Company.

may be mentioned aeroplane, auto racing, baseball, basketball, boxing, building house and setting it afire, catcher's hidespy, cat and mouse, cowboy and Indian, cutting trees, fighting, football, hip a de divel, hopscotch, Pike's Peak, policeman, Sally Walker, shinny, snowballing, and so forth. In the list of passive play items are cards, checkers, dolls, housekeeping, marbles, office, painting, radio, sleigh riding, store, watching chickens, and so forth.

PHYSICAL EDUCATION

COURSES

Physical education is found to be more widely established than health education. Seventy-eight cities report having a course in physical education, and only 7 distinctly lay no claim to one. In 75 per cent of the cities with such a course the work is conducted by the room teachers. This on the face of it paints a very limited picture, both as to space used and character of work done. Ask the average room teacher to take her children out of doors for physical education and she does it by setting up another schoolroom in the open. This is perfectly natural, because unfortunately, playground management is still far removed from schoolroom management. No administrator can feel that he has done his bit toward the physical and social development of children through muscular activity, until he has first provided trained leadership, with time allowance on the program—30 minutes in the morning and 30 minutes in the afternoon is none too much—and space for organized games, such as baseball, soccer, hockey, basket ball and volley ball.

On the playground is a wonderful opportunity to link the natural interest in physical achievement with health conduct and ideals. This can only be done if the big muscle activity program is a natural one, in which the children find real pleasure. In the 78 cities reporting a course in physical education, 75 cling to the formal type of exercise, 1 even confines the whole program to formal gymnastics, the rest giving some time to games and dancing. Seven cities have an entirely informal program which requires a more highly trained type of leadership for its success but which is more easily made an integral part of health education. An athletic program can be made most informal with every possible opportunity for self expression, self appraisal and self direction from the pupils. This can only be accomplished through democratic participation. Much is being done by the

leaders in recreation and physical education to abolish the selfish and injurious phases of athletics, with special emphasis on the problems as related to girls and women.*

In recommending an informal type of physical education program, the importance of individual corrective exercises for poor postural cases is not lost sight of. This is extremely important and is vitally connected with the problem of nutrition. Exercise, food, and rest are so closely connected in all postural and nutritional cases that satisfactory results can only be obtained by the regulation of all three.

SCHOOL PLAYGROUNDS

In looking for evidence of responsibility in provision for recreational facilities, the survey report shows that physical education is fast becoming synonymous with recreation as it should be. Joseph Lee, in expressing the meaning behind the Playground and Recreation Association of America of which he is president, writes as follows: "The real end is the service of the play spirit. That is the way the child feels it. He is not seeking self expression, not even seeking play. He is seeking something that comes to him from a spirit bigger than he is, to which he gives himself." Thanks to Mr. Lee and the Association which he represents, we no longer have to explain and define the responsibility of educational programs for including play. But when we see through this survey the various ways in which this responsibility is borne, it makes us feel that here again many are not putting the shoulder to the wheel although very few in authority will openly admit that they are not in favor of the play program.

Size.—Play is the serious business of a child's life. In the crowded city, however, it is often hard work to find a place for play. Open fields are scarce. It has been necessary for cities actually to set apart tracts of grounds for play purposes. They have also used the schools as centers of play. The school buildings visited in the survey have been classified as to the size of play space provided on the school grounds. As a unit of measurement there was taken the area of the playground space in relation to the area of the building. One to 4 would mean that the playground space is about 4 times the ground

* National Amateur Athletic Federation Boys' Work in the charge of Major John Griffith, 116 South Michigan Avenue, Chicago; and Girls' Work in the charge of Miss Lillian Schoedler, 2 West 46th Street, New York City.

area of the building. These relations were estimates and not measurements. The cities of California and the West South Central States are most liberal in playground allowance for school buildings. This might be anticipated by reason of the lesser population per acre of ground. However, this did not hold true for the Mountain States or the South Atlantic States. New England has the smallest number of large school playgrounds. The South Atlantic States stand next, the Mountain third, and the Middle Atlantic fourth. A table with these estimates of school playground area is given below:

Section	Number of Schools Visited	Per cent of Schools in Group Ratio of School Building Ground Area to Playground Area		
		1 to 1 or less	1 to 2 or 3	1 to 4 or more
New England	129	52	27	21
Middle Atlantic	176	27	41	32
South Atlantic	116	47	25	28
East North Central	206	9	35	56
East South Central	53	34	9	57
West North Central	66	8	39	53
West South Central	34	0	9	91
Mountain	28	57	14	29
Pacific	78	0	1	99
Total	886	..	..	..
Average	..	26	28	46

Equipment.—In the matter of equipment we find that swings, slides, teeters and sand boxes are by far the most frequently found pieces of apparatus. This indicates that the youngest children are looked after first, which is as it should be, for the older children can make their own baseball diamonds and hockey fields if necessary. Children liked to swing and teeter and slide down from high places long before supervised play was thought of, and it is interesting to find this evidence of the satisfying qualities of these old-time activities. For a school playground to provide nothing for children to jump up and hang from is a decided omission. A horizontal ladder and horizontal bars at different heights should be added. The Playground and Recreation Association Badge Tests include chinning as an event for boys. These tests have been planned with the all round development idea and should always be taken into consideration when a playground is planned. These tests differ for boys and girls and this is a very significant fact to remember. We are so apt to consider

the needs of the boys first and to use this equipment as far as possible for the girls. Up to the age of 10 or 12 this is right, but from there on the girl's interests and needs begin to differ. The boys go on developing stunts and playing more and more vigorously and it becomes impossible for the girls to hold their own place of equality. Therefore they must be given their own opportunities. In 54 cities there are 2 or more pieces of play apparatus in 53 per cent of the schools. Five cities have at least 1 piece at 1 or more of the schools. Twenty-six cities have no play apparatus of this nature. Information is lacking for 1 city.

Next on the list of desirable playground equipment is space for baseball diamonds, tennis courts, basket ball courts and football fields. If we could have enough of these to keep as many people playing happily as we provide for on the slides and swings and teeters, we would feel that the figures really stand for community recreation. But as long as the popular demand in schools is for highly trained winning teams, the majority of the school children will be on the sidelines. One way to break down the much talked of over-specialization in athletics would be for our public schools and municipal systems to take the lead rather than to follow the precedents established by private schools and universities. Instead of raising large sums of money through gate receipts, and building high school and municipal stadiums, it would be more to the point to lay out large play fields with the thought of providing for large numbers of players rather than giving to a few the perfected technique of the game.

Gymnasiums—Inside opportunities for play are measured in this survey by the number of gymnasiums found in each city. Ten cities have none. Fourteen have them in high schools only, and 19 have them in one grade school only. Thirty-eight cities have them in from 2 to 9 school buildings. Three cities have them in all schools. This provision for the activity program in the schools has followed the trend of all educational progression in this country. Starting in the universities, it has gradually moved down to the elementary schools, where it is most important. This is the age when every child is ready to enjoy learning the right muscular coordination that will make him a good performer. Once having learned this he will not be satisfied to give up calmly the satisfaction that comes from big muscle activity. He will insist upon time and opportunity for tennis, golf, hiking or swimming when he becomes a full-fledged citizen. In other words he has formed the habit at the time when it is easy to form it.

Direction—Proper leadership is of more importance than playgrounds or equipment. Fifty-five cities report organized recess play on the school playgrounds, often under trained leadership. It is all very well to say that all children need is space and time in which to play but the actual facts are that if the greatest opportunity is to be given to every child in these crowded school days, wise guidance is essential.

PHYSICAL EXAMINATION

There are but 4 cities out of the 86 that do not lay claim to some form of physical examination work among school children. The purpose of the examination may be said to be manifold. There is a desire on the part of the schools that children be in such physical condition as to respond to the educational program. As many children are not sent to school in perfect condition the schools have taken steps to locate children with impairments and assist in their correction by notifying parents of the findings. Schools have even gone farther and provided certain treatment facilities such as dental clinics and classes for the conservation of vision and for those threatened with tuberculosis. As education is compulsory, it is reasonable for the school authorities to take such steps as will make the teaching procedure most effective. The child who cannot see requires more attention on the part of the teacher and he not only checks his own progress but likewise interferes with the progress of his classmates. The school has a financial as well as a humanitarian interest in that child's vision.

The schools have the responsibility for educating the children of the community. This responsibility holds good for the child who can neither see nor hear, for the child who cannot walk, for the child who has a weak heart and for the child who is in such delicate health as to prevent him from mingling freely with his fellows. The recognition of this responsibility has resulted in the formation of special classes for the handicapped.

The schools are interested in the physical examination as an index of the problem before them and as a check on progress from year to year.

The department of health and the community as a whole are interested in the physical examination program because of its bearing on the damage rate of the community. The taxpayers of the community are interested because the lessening of handicaps in children

will mean fewer dependent people to be cared for in later life. The disciplinary departments of the city are interested in the school health measures because they disclose certain potential adult offenders. Early recognition of pernicious tendencies permits more intelligent dealing with such individuals.

THE EXAMINATION PROGRAM

The most common practice is to have the school examination made by physicians employed on a part-time basis. Of the 82 cities giving routine physical examinations, 65 place this work in the hands of physicians. In 17 cities physical inspections are made by nurses.

Frequency—There are great differences to be noted in the methods of examination. Approximately three-fifths of the cities doing this work endeavor to examine school children annually. The distribution of cities in regard to frequency of examination is as follows:

Annually	50 cities
Once in 2 years	8 cities
Once in 3 years	4 cities
Twice during school life	6 cities
Once during school life	8 cities
Indefinite	6 cities
No inspection	4 cities

Time Spent on Examination—On the face of it, the annual examination of every child seems a most commendable procedure, but judging by the time spent on each child the value of the examination is open to question. The average time spent by a physician on each child in 62 cities for which records are available is less than 3½ minutes. The distribution of cities by time devoted to each child is as follows:

One minute, or less	13 cities
More than one minute and up to 2 minutes	22 cities
More than two minutes and up to 5 minutes	15 cities
More than five minutes and up to 10 minutes	7 cities
More than ten minutes	5 cities

The time spent on each child is thus not over 2 minutes in 35 cities which is more than half of those in which physicians carry on the examination work.

Grades Covered—In many cities where there is attempted an annual examination this is limited to certain grades. Only 23 cities endeavor to examine all children each year. Other arrangements are:

First to eighth grade, inclusive	15 cities
First to seventh grade, inclusive	1 city
First to sixth grade, inclusive	4 cities
First to fourth grade, inclusive	3 cities
First, fourth and eighth grades	1 city
Third and fourth grades	1 city
First to third grades, inclusive	1 city
Fourth to ninth grades, inclusive	1 city
Kindergarten, only	5 cities
First grade, only	2 cities
Third grade, only	1 city
No regular plan	28 cities

As a rule the physical examinations are restricted to the public schools but parochial schools are covered in 25 cities and other private schools in 7 cities.

Compensation of Examiners—The number of physicians employed on the examination work within a city varies from 1 to 21. Forty-five cities have either 1 or 2 part-time physicians. Compensation for this work was difficult to learn in most cases. The highest salary paid for a full-time position was \$4,000 in 1 city. In 6 cities the compensation is between \$3,000 and \$4,000. Two cities pay less than \$900 for part-time work. The others vary between these limits.

Items Included in the Examination—An effort was made to determine the items included in the school examination. The survey schedule contained a detailed list of 36 items and those covered in each city were checked. While the schedules are fairly complete as to amount of information secured, the surveyors have expressed considerable doubt as to its reliability. For instance, the record shows that 55 cities make examinations of the heart, and 49 cities of the lungs. Judging from the brief time commonly spent in examinations, it is extremely unlikely that these more difficult procedures are done as widely as indicated. It is very easy to say yes when confronted with a long table of questions. The "yes" might mean that the particular measure was carried out at some time. There is a difference between what is routinely done and what is done only on occasion.

Thus, while the figures given below are the replies received, there may be doubt that they give a fair picture of what actually takes place.

The most common items in the examination schedule are:

Teeth	83 cities
Height	82 "
Weight	82 "
General condition	78 "
Eyes	78 "
Tonsils	78 "

Largely because of the fact that the children are not stripped, such an item as hernia is rarely included in the examination. The condition of the feet and spine, and the presence of chorea are likewise infrequently mentioned. In connection with the omission of the examination of the feet, it should be noted that flat feet were responsible for more rejections in the draft examinations than any other cause.

Vision and hearing are rarely tested by the physician, this being left to the nurse. The chief inspection items looked after by the nurse are height, weight, hearing, and vision.

The teachers' participation in the physical inspection of the child has to do principally with such items as posture, height, and weight and certain of the social and mental manifestations.

The psychologist is mentioned by 7 cities, in connection with intelligence rating and social behavior.

As a sample of the variety of methods followed, the persons mentioned as responsible for the inspection of teeth are:

Physician	25 cities
Nurse	24 cities
Physician and nurse	6 cities
Physician and teacher	1 city
Physician, nurse and teacher	2 cities
Dentist	8 cities
Dentist and teacher	2 cities
Dental hygienist	5 cities
Dental hygienist and physician	3 cities
Dental nurse	1 city
Dentist, physician and dental hygienist	1 city
Private physician	1 city
Private physician and nurse	1 city

Until health bookkeeping in the schools is much better standardized than it is at present it is not possible to pass on the merits of these various methods of examination and inspection.

Obstacles to Medical Examinations—Much is expected of the school physician but he frequently works under great handicaps. There are 30 cities which recognize that the examination is a technical procedure requiring certain facilities for work and they provide a special room for the examination. In 13 cities examinations are conducted in the principal's office, in 3 cities in the nurse's room. In 16 cities, however, and probably many more if the facts were known, the physician is expected to do his work in the classroom.

Of 65 cities which give the medical examination, the child's clothing is removed to the waist routinely in only 9, and occasionally in 6. In 24 cities clothing is not even loosened at the neck. In 14 cities the surveyor was informed that public opinion has expressed itself definitely against the disturbance of clothing during the inspection. It is reported that at least one state prohibits this by legislation and in a number of instances there is a local ordinance against the practice.

The attitude of a portion of the public, with regard to the physician's work in examining children makes the efforts of the educational and health authorities toward improving the health of the school population most difficult. The physician is expected to make an authoritative pronouncement on the condition of the child, and yet he must do this in a crowded room, with time for little more than a glance at the child, and with restrictions imposed that prevent him from examining the entire body. The situation reminds one of the nursery rhyme,

“Mother, may I go out to swim?”

“Yes, my darling daughter,

Hang your clothes on a hickory limb,

But don't go near the water.”

Presence of Parents—Obviously the presence of parents at the examination is desirable. In some quarters it is felt that this retards the examination seriously, while there are other instances of cities eagerly welcoming such attendance. There are 14 cities which have made a definite effort to have parents present. Sacramento reports as many as 95 per cent of parents present. Kalamazoo reports from 40 to 50 per cent of the parents of kindergarten and first grade children. Lincoln states that the presence of 12 per cent is secured.

Information to Parents—The results of the examination are usually communicated to the home on printed slips. Sixty-one cities follow this plan and 5 do not. Information was not obtainable on this point in 5 cities. It is the nurse's duty to interpret the facts to the family and to follow up the matter so as to secure attention and action. This is the practice in 67 cities. In only 1 city is the nurse relieved from this duty. In 8 cities the teachers are also charged with the responsibility of assisting the nurses in this matter.

PHYSICAL DEFECTS

It is impossible to present either a representative or a comparative picture of the prevalence of physical defects in the school population. In fact one of the most obvious weaknesses disclosed in the survey is the lack of standardization in the definition of a defect and a correction. It means little that one city has discovered a thousand defects and another one hundred. If uncleanness, underweight, decayed teeth and pediculosis are included in the list of defects by one city, the total number of defects will be much greater than in the city which does not include these items. Similarly, in the matter of corrections. If there are included in the list of defects those which are easily remedied, the proportion of corrections will be greater than where such items are not included. There is the greatest need for standardization of this work so as to permit useful comparisons.

Need for Definition—Furthermore, before reports on physical defects will be reliable there must be a standardization of terms. What is an eye defect? Does it mean the child cannot read the 20/20 line on the test chart, or the 20/30 line, or the 20/40 line? Does it mean that the child cannot see the line without glasses whereas he can see it with glasses? Does it include inflammation of the eyes as well as visual defects? If one city has one definition of a defect and another city another definition, the results in the 2 cities are not comparable. Imagine 3 people discussing the number of mountain peaks in their home county. A states that there are 50 mountain peaks; B claims 100 and C, 200. Which is right? A's definition of a mountain peak is an elevation of 2,000 feet or more. B's definition is 1,000 feet and C's standard is 500 feet. Before this question can be answered, there must be a common understanding as to what is a mountain peak.

So it is with eyes and throats and lungs and hearts. We shall not attempt to express in tabular form the percentage of all defects

found in school children nor the percentage of defects corrected. Merely to illustrate the points made there are presented the results in a few instances, which will show the great variations in the reports.

In the first place the number of examinations conducted varies from 689 in Pasadena to 18,000 in Winston-Salem. Expressed in relation to the school enrollment, for every 100 children enrolled, the number of examinations varies from 7 to 200.

Eye Defects—A record of eye defects is available for only 37 cities, 33 cities not possessing information of this character and 16 cities not doing this work. The results in these 37 cities are expressed as number of eye defects found for each 1,000 examinations. This is probably closely analogous although not exactly the proportion of children with eye defects for each 1,000 children examined. This proportion varies from one in Kalamazoo to 355 in Sacramento. In percentage this is 0.1 per cent and 35.5 per cent. The average ratio per 1,000 for the third of cities having the lowest ratios is 26, for the next third 65 and for the highest third 151.

Defects of Teeth—Records of defects of teeth are reported for 36 cities. The number of defects of teeth, presumably number of mouths with one or more defective teeth, per 1,000 examinations, varies from 28 in Pittsfield to 753 in Fitchburg (2.8 and 75.3 per cent). Averages of the third of cities with the lowest ratios per 1,000 are 134, and for the next third 321 and for the highest third 546.

Nose and Throat Defects—Defects of nose and throat expressed in relation to each 1,000 examinations in 37 cities varies from 19 in Binghamton to 582 in Huntington (1.9 and 58.2 per cent.) The average for the third of cities with the lowest ratios is 65, for the highest third 369.

CORRECTION OF DEFECTS

Coming now to the question of corrections we find the percentage of eye defects corrected to vary from 5 in Mt. Vernon to 75 in Niagara Falls (records for 25 cities); teeth defects corrected from 7 in Kenosha to 113 in Wheeling (records for 27 cities); nose and throat defects corrected from 1 in Huntington to 65 in Berkeley. The corresponding averages of the middle third of cities are 30 per cent for eye defects, 43 per cent for teeth defects and 14 for nose and throat defects.

In computing the proportion of children with a given defect 2 numbers are needed, that for the children examined for that specific

defect and that for the children found with that defect. Unquestionably the figures which the surveyors were able to collect were not comparable in this respect. Included in the number of examinations were probably re-examinations of the same children as well as number of children examined for some defect other than the particular one in question. When is a defect corrected? What constitutes a correction? The answers to these questions are perplexing. In some cases a correction is credited only upon receipt of a report from the family physician or clinic physician, or upon the word of the school physician after making another examination. The child's statement, a note from the parents, the teacher's statement, the nurse's inspection, any or all of these sources of information are relied upon in making the decision. There is no one method universally followed. This as well as the other possibilities for divergence in results mentioned above account for the wide range in figures. As has already been stated standardization in terminology and methods of computation are needed before these data can be truly informative.

SPECIAL CLINICS AND CLASSES

Dental Clinics—Dental clinics are conducted in the schools of 44 cities. The major activity of the clinic in 33 cities reporting was extractions in 14, fillings in 13 and cleanings in 6. The number of mouths cleaned by dental hygienists varied from 62 in New Castle to 3,900 in Altoona. Altoona employs 6 full-time dental hygienists.

Retarded Children—Classes for handicapped children are found in many cities, although in some instances the grouping of children who require a particular régime is for convenience in teaching as well. Classes for backward or retarded children are most numerous, 60 cities providing such services. Forty-four cities contribute to a total enrollment of 2,732 children in these classes or an average of 62 for each city. The maximum enrollment within a city is 270, the minimum 5 children.

Open Air Classes—Twenty-four cities have established open-air classes for children markedly underweight, or who are incipient cases of tuberculosis or are exposed to tuberculosis in their homes. The enrollment in 20 cities averages 36 pupils to a city, the maximum being 98 in Lansing and the minimum five in East Orange. Twenty-one cities provide mid-day lunches to these children; 17 supply extra clothing and 20 permit a mid-day rest period.

Hearing, Vision and Heart Classes—Classes for deaf children and for the conservation of hearing are found in 9 cities, classes for the conservation of vision in 5 cities, for the blind in 1 city, and for heart cases in 3 cities.

EXAMINATION FOR WORKING PAPERS

While not strictly a school matter, it may be mentioned in this chapter that the requirement of a certificate showing that a child is in such physical condition as to enter industry without prejudice to health, has been adopted in 54 cities. This is usually the result of a state enactment or local ordinance. In these 54 cities, the examination is conducted by the department of health in 13 instances, by the department of education in 19, by the state in 3, by either the school or health department in 1, and may be done by any physician in 18.

The efficacy of this measure is open to some question, however, by reason of the many instances where the number of certificates granted corresponds exactly with the number of examinations made. In 16 of 28 cities having records available this was the case. Evidences of the exercise of more discrimination in the matter are to be found in New Castle where only 119 permits were issued out of 219 examinations, New Britain with 863 permits issued out of 929 examinations, Mt. Vernon with 288 permits issued out of 348 examinations and Winston-Salem with 1,552 out of 1,602. The greatest number of working permits issued was in Pittsfield with 1,625. There were 1,552 in Winston-Salem, 1,170 in Brockton and 1,147 in Holyoke. The number of permits issued for each 1,000 population will average around 15. About half of the cities issuing permits require a re-examination upon change of occupation.

The school examination records are made use of in some instances in this connection, 15 cities requiring the school records and giving an additional examination also. Five cities rely altogether on the school records. Sixty-three cities do not make use of the school records.

It is the judgment of the surveyors that in 8 cities the examination for working permits is valuable in adequately safeguarding the health of the child, in 10 cities it is fairly efficient, but in 39 cities, there is little evidence of its being worth while.

CONTROL OF DISEASE

School health work really had its beginning as a protective measure against the spread of communicable disease. It was the thought

that by visiting the school daily a physician would be able to detect early symptoms of communicable illness and could thus exclude the child promptly. The actual carrying out of this plan in an effective way means a great deal of work. Rightly, each child should be inspected every morning. This is too great a task for a single physician. With the growth of public health nursing this duty has been assigned to the nurses, but the task is equally great for a single nurse in a school. It has finally seemed most practical that each teacher should be instructed in the obvious signs of beginning illness and that the morning inspection should be recognized as a part of her school duties. Perhaps the most common method is for the teacher to look over her children daily and send children with suspicious signs to the nurse, the latter deciding as to exclusion and to the notification of parents and the school physician.

METHODS OF DETECTION

Frequency of Inspection—The practices as reported in the 86 cities relating to the frequency of inspection of children for contagion are as follows:

Daily	33 cities
Weekly	10 cities
During epidemics only	11 cities
No regular plan	8 cities
No inspection	10 cities
Information not specific or obtainable	14 cities

Responsibility for the inspection is indicated by the following:

Teacher alone	11 cities
Nurse alone	21 cities
Teacher and nurse	18 cities
Physician alone	5 cities
Teacher and physician	1 city
Nurse and physician	15 cities
Teacher, nurse and physician	3 cities
No inspection	10 cities
Information not specific	2 cities

The passing of this routine work from the hands of the physician to the nurse and teacher is shown by the fact that in 50 cities responsibility is with nurse or teacher, or both, while the physician participates in the work either alone or with teacher and nurse in but 24 cities.

Training of Teachers to Detect Disease—The conduct of the inspection work by teachers assumes that a certain amount of instruction on the subject has been given to them. This information is imparted to the teachers through special talks by physicians and nurses and through the issuance of appropriate literature. Saginaw and Sacramento pay particular attention to the teacher's part in this work.

Further training of the teaching staff to be on the lookout for such matters as excessive fatigue, nervous disorders, maladjustment to school life, poor hygienic care, and so forth, was also reported in a number of cities.

INQUIRIES INTO CAUSES OF ABSENCE

The avowed object of the daily inspection of school children is to lessen illness and incidentally to increase the regularity of school attendance. There are 20 cities which report having made special inquiries into the part illness plays as a cause of absence. For instance, Chester reports that 54 per cent of school absence is due to illness, Muncie reports a corresponding figure of 38 per cent, and Pasadena 32 per cent.

The routine investigation of the causes of absence is the practice in 72 cities. This investigation is the duty of the truant officer in 29 cities. The truant officer and school nurse have this responsibility in 23 cities, and the nurse alone looks after this in 10 cities. In 3 cities this is the teacher's duty. In 8 cities there is investigation, but the responsibility is divided. No investigation whatever is reported in 9 cities and in 4 information was unobtainable.

Prevalence of Illness—Some conception of the prevalence of illness among school children is obtainable from the questionnaire submitted to fifth grade pupils. The question was asked: "How many days were you out of school last week because you were sick?" This question was answered by 34,397 children. The distribution of replies was as follows:

Number of Days' School Absence the Previous Week Because of Sickness	Number of Children	Per Cent of Total Children
None	30,038	87.3
One	2,374	6.9
Two	828	2.4
Three	316	.9
Four	202	.6
Five	639	1.9

Eighty-seven per cent of children were not absent the previous week because of sickness. In the detailed records kept by the United States Army there is a term used called the "non-effective rate." This shows the proportion of men unfit for duty and gives the commanding officer an understanding of the number of men that can be counted upon for immediate duty. This term is not inapplicable for schools. From the figures above it may be computed that the average daily non-effective rate for sickness among this group of children

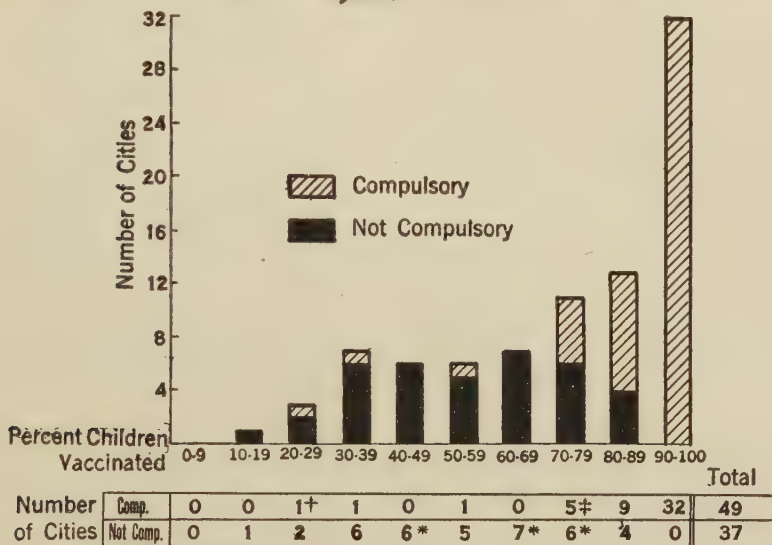


CHART 35

* In three cities vaccination is compulsory only at times of smallpox outbreak.

† While technically a requirement in this city, the Act is admittedly not enforced.

‡ One city in this group was just beginning compulsory vaccination.

during the period from January to June is 5.3 per cent. This reveals one of the health problems in the school. It should be the aim of those responsible for the health of school children to reduce the absence rate from sickness to a minimum.

IMMUNIZATION

Vaccination—Science has given us an additional safeguard against a few diseases. Smallpox can be successfully prevented by vaccination. To quote a recent experience, the Health Department of Detroit

has recently published the statement that of 1,610 cases of smallpox occurring there in 1924, not a single case developed in a person who had been successfully vaccinated within 5 years. Eighty-five per cent of the cases had never been vaccinated. Fifteen per cent of the cases had been successfully vaccinated at some time during life but not within 5 years.

In many states vaccination is a requirement for school entrance. This is the case in 49 cities of the present study. Thirty-seven cities in 16 states do not make this compulsory. The effect of the compulsory vaccination act may be judged by the proportion of vaccinated children in the school population. A measure of this was obtained in the survey, each surveyor securing from a representative proportion of fifth grade school children a written answer to the question, "Have you ever been vaccinated against smallpox?" Replies were received from 34,709 children. In the cities where vaccination is compulsory the average of fifth grade children vaccinated was 87 per cent. In the cities where vaccination was not compulsory this average was 56 per cent. The variation in proportion of children vaccinated is suggested in Chart 35.

The 32 cities in which 90 per cent or more of the fifth grade school children reported vaccination are as follows:

Maine—Portland 94.

Massachusetts—Brockton 96, Fitchburg 96, Haverhill 96, Quincy 94, Salem 93, Newton 93, Malden 92, Everett 91.

Rhode Island—Woonsocket 96, Pawtucket 93.

Connecticut—New Britain 98.

New Jersey—Hoboken 97, Atlantic City 95, Perth Amboy 95, West Hoboken 94, East Orange 90.

Pennsylvania—McKeesport 98, Johnstown 95, Altoona 94, New Castle 94, Lancaster 93.

Virginia—Roanoke 93, Portsmouth 91.

West Virginia—Wheeling 91.

North Carolina—Winston-Salem 94, Charlotte 92.

South Carolina—Charleston 94.

Georgia—Augusta 93.

Alabama—Montgomery 90.

Ohio—Springfield 94.

Kentucky—Lexington * 100.

* Only 112 children questioned.

Some idea of the relative protection against smallpox in different areas of the country is suggested in the following table:

Section	Number of Cities in Survey	Average of Per Cent of Fifth Grade School Children in Individual Cities Reported Vaccinated
New England	15	92
East South Central	5	90
South Atlantic	10	88
Middle Atlantic	18	82
Mountain	2	67
East North Central	20	62
West South Central	5	52
Pacific	6	51
West North Central	5	41

Diphtheria Immunization—The promising advancement in the campaign for the eradication of diphtheria by the administration of toxin-antitoxin to children of school age and those below school age is already well known, particularly through the work of Park and Zingher in New York City. The application of this preventive and the results in a smaller city were reported recently by Sears in the American Journal of Public Health for February, 1925. This work was found to be under way in 40 of the 86 cities of the survey. The number of children immunized in individual cities by the departments of health and the departments of education during 1923 varied from 27 to 4,900. This high number was reported in East Orange. Four thousand children were reported immunized in Stockton, 3,633 in Holyoke, 3,296 in Saginaw, 2,772 in Jackson and 2,000 each in Altoona and Niagara Falls. Eighteen other cities also reported numbers from 500 to 2,000.

SANITATION OF SCHOOL BUILDINGS

The sanitation of the school plant is an administrative responsibility, for it is absurd on the face of it to expect children to do their part toward proper growth and development if every time they sit down, or take a drink of water or go to the toilet or wash their hands or use a pencil they are obliged to violate some measure of hygiene.

DRINKING AND TOILET FACILITIES

Drinking Water—Obviously drinking water should be available in every school building. The survey reveals that this is universally

recognized for 99.6 per cent of the 900 school buildings personally visited by the surveyors in the 86 cities are provided with this essential. But 3 schools were found without this equipment.

Common Drinking Cup—The common drinking cup was all too common a few years ago. The schools in these cities have, however, banished the common cup and dipper, substituting usually a drinking fountain in its place. There are only 13 schools in 8 cities that have not taken this action.

Toilets—Accepting as a very moderate standard 1 toilet to every 40 school children, it is found that only 60 cities have 100 per cent adequate toilets in the schools. Taking the entire number of schools, 93 per cent attain this standard. There are several cities, however, where less than half of the schools have adequate toilet accommodations.

Ninety-three per cent of the schools are equipped with inside toilets. There are 27 cities, however, with 1 or more school buildings still depending on the outside privy or its equivalent.

Lavatory Facilities—Although one of the cardinal principles of personal hygiene is that hands should be washed after attending the toilet, it was discovered that cold water, without either towels or soap, is all too commonly the only school lavatory provision. No towel is a step better than the common towel. Considering the practices of a few years back it may be regarded as a rather astonishing fact that the common towel was found in only 10 schools, and 7 of these were in 1 city. School boards in the 86 cities deserve commendation for this achievement. The arbitrary standard fixed was one lavatory to every 80 pupils. There are 49 cities attaining this standard in all schools visited. None of the schools visited in 4 cities attains this standard and in 5 other cities not over one-fourth of the schools are satisfactory in this regard.

Cleanliness is a difficult subject to standardize. However, the surveyors recorded their impressions as to the practical cleanliness of toilet rooms. Eighty-seven per cent of the school buildings were voted a favorable report in this regard. In 1 city clean toilet rooms were found in but 7 of the 13 school buildings visited, in another 2 out of 9, in another 2 out of 10.

FIRE PROTECTION

There is perhaps no catastrophe which can awaken such indignation among the public as the burning of a school building with chil-

dren trapped inside without means of escape. A building, particularly a frame building of more than 1 story should either be equipped with an outside fire escape to the upper floors or else there should be 2 distinct stairways in different parts of the building. The surveyors observed the schools with these facts in mind. In only 37 cities were all the schools visited thus protected against fire. In nine cities not one of the buildings was thus safeguarded. This is a matter that should be remedied without delay. While recognizing that many old school buildings are still in use and that the expenditure of money on necessary alterations to provide the safety fire exit seems illy spent if the building is shortly to be discarded, nevertheless the correction of these most obvious deficiencies is surely the very least that a city can do to protect its children from a danger that is real.

SANITATION IN THE CLASSROOM

Cleaning—The broom and the duster still hold sway in the hands of the school janitor. Vacuum cleaning of schoolrooms is an innovation not yet extensively used. Twelve cities, however, are using vacuum cleaners in 1 or more schools. All the schools visited in Highland Park, Atlantic City, Charlotte, and Lancaster were equipped with these devices. While the broom still reigns a favorite there is a definite effort to keep down dust, for in 81 per cent of the schools visited a sweeping compound is used for this purpose.

Lighting—It was not possible in the time available to make notation of all specific details in relation to proper lighting in the schoolrooms visited. The impression was gained, however, that the question of lighting was fairly well cared for in the schoolrooms. The only index recorded related to the position of the windows. In only 31 schoolrooms in 19 cities were the windows other than at the left or rear of pupils.

Seating—The matter of seating is something that still deserves more attention. Double seating is objectionable because of the intimate contact resulting. Adjustability in the height of seats and desks is desirable for the comfort of the child, and to prevent eyestrain and bent posture. Double seating was observed in fifth grade rooms in about 8 per cent of the schools visited. Forty-nine cities have eliminated this entirely. Seventy-seven per cent of the schools have adjustable seats, as represented by the fifth grade rooms visited. There are still 29 cities in which no adjustable seats were found in fifth

grade rooms. The type of seat used in many cities suggests that cost, instead of hygienic construction is the governing factor in selection.

Pencils and Books—Common pencils have been eliminated in 43, or half of the cities. This estimate is based on questioning of the teachers in the fifth grade rooms visited. In 23 cities common pencils were found in every fifth grade room visited.

In 21 cities it was found not to be the practice to use school books in common. However, in the other 65 cities this practice was quite universal, in fact in 93 per cent of the schools.

VENTILATION AND HEATING

In the course of a week's survey of a city with but a brief time allowed for the visiting of each school building and then but 1 or 2 rooms in each building, it was not possible to gather extensive or wholly conclusive data on the subject of heating and ventilating. Certain observations were recorded, however, which have a bearing on this subject. Nine hundred schools were visited and the fifth grade rooms entered to give the health habit questionnaire previously described. While in the room the surveyor made notes as to the presence of a thermometer, whether windows were opened, whether height-weight charts were displayed, and so forth.

Thermometers—First, as to the question of room temperature which is the prime essential in school ventilation, out of 879 school-rooms for which information was obtainable, thermometers were found in all but 38. Frankly, this finding was unexpected. Our information does not go so far as to say how accurate these thermometers were nor whether the teachers profited by the thermometers. However, the mere presence of the thermometer is the first step in interesting the teacher in maintaining a desirable temperature range in the classroom.

Room Temperature—The temperature indicated by the thermometer was recorded by the surveyor. It would not be significant to average all these temperature readings inasmuch as some rooms were visited in January and some in June. Some cities are located in the warmer south, others in the colder north. In the analysis of temperature, therefore, we have limited the records to those cities which were surveyed from January 1st to May 1st, and in order to have reasonably comparable data as regards outdoor weather, have confined the records to cities in Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Indiana, Michigan and Montana. With this precaution

the probabilities are that the outdoor temperature in this selected group of cities was not sufficiently high as to account for a high temperature within the schoolroom. The distribution of temperature readings was as follows in 278 rooms in 31 cities:

Temperature Degree Fahr.	Number of Schoolrooms	Per Cent
Below 66	16	6
66-70	110	40
71-75	104	37
Over 75	48	17

The significant thing about these figures is that in over half of the rooms the temperature was above 70 degrees. Of course in making this observation the readings are accepted at their face value with no attempt made to check the accuracy of the thermometer. In 17 per cent the temperature was even above 75. This is too high. For the best interest of the school child temperatures should range between 65 and 70 degrees. The experimental evidence of the New York State Commission on Ventilation supports such a statement.* As judged by these records overheating continues to be an all too common fault in the American schoolroom.

Open Windows—In this same selected group of schools the rooms have been classified by type of ventilation, and as to whether or not the windows were open. The types of ventilation have been classified roughly under 4 heads. In recording these facts the surveyor was guided by his own observations supplemented where necessary by the statement of the teacher. In some of the older buildings several changes have been made in the ventilation equipment and at times it is difficult to identify the exact method of ventilation in use. A more painstaking investigation of this subject might result in a slightly different classification than has been made here. It is believed, however, that the following tables are reasonably accurate.

Type of Building Ventilation	Number of Rooms Visited	Number with Windows Open	Per Cent with Windows Open
Windows only	65	48	74
Window and gravity exhaust	69	36	52
Mechanical ventilation and gravity exhaust	140	48	34
Unit system	15	11	73

* Report of New York State Commission on Ventilation, 1923, E. P. Dutton & Co., New York City.

Where ventilation is by windows only or with windows and gravity exhaust the opening of windows is largely determined by the temperature of the room. With mechanical ventilation it should not be necessary to open windows, in fact open windows mean an appreciable loss of heat and except with individual duct construction it means short circuiting of the air flow. However, windows were found to be open in a third of the mechanically ventilated rooms.

Overheating and Type of Ventilation—Mechanical ventilation is a more costly procedure than window ventilation with gravity exhaust.* The initial construction cost is reported as at least a third more, and for the unit system of mechanical ventilation nearly two-thirds more and the operating cost is likewise appreciably greater. In view of this fact we would expect measurably better conditions in the mechanically ventilated building in order to warrant the greater expense. The only data on this point gathered in the course of the survey were the temperatures found in rooms with the different types of ventilation. Data follow for 261 rooms in 30 cities.

TEMPERATURES IN ROOMS VARIOUSLY VENTILATED

Type of Ventilation	Number of Rooms Visited	Under 66°	Per Cent of Rooms			
			66° to 70°	71° to 75°	Over 75°	Above 70°
Window only	56	5	39	29	27	56
Window and gravity exhaust	62	5	37	45	13	58
Mechanical with gravity exhaust	130	6	39	38	17	55
Unit system	13	0	54	23	23	46

The 13 rooms with the unit system had the least overheating, that is the fewest rooms with temperatures above 70 degrees. The difference between the other 3 methods are negligible. Extreme overheating, that is over 75 degrees, was found in the rooms ventilated by windows alone in 27 per cent, by the unit system in 23 per cent, by mechanical ventilation with gravity exhaust in 17 per cent and by windows and gravity exhaust in 13 per cent.

There is too much overheating as has already been stated. On the basis of these observations it is not apparent that the more expensive mechanical equipment greatly reduces this. The recommendations of the New York State Commission on Ventilation favored window

* The Ventilation of School Buildings, by J. R. McLure, Teachers College, Columbia University, New York City.

ventilation with gravity exhaust as the best practical method for the average school room.* There is no evidence in the data gathered in this survey which would indicate superiority of the mechanical methods.

Methods of Ventilation—Distribution of the types of ventilation found in 855 school buildings in 84 cities of the survey indicate that mechanical ventilation is most common (45 per cent) and window ventilation with gravity exhaust least common (18 per cent). This proportion is, of course, largely determined by state laws which call for a certain definite continuous flow of air, although there is little, if any, scientific basis from a health standpoint for such laws. Continuous air flow can be assured only with mechanical ventilation.

Considering the cities by sections of the country, window ventilation with gravity exhaust is most common in New England where 56 per cent of the schools visited are in this class. Mechanical ventilation is most frequently found in the Middle Atlantic and East North Central States. Window ventilation without gravity exhaust was observed in 88 per cent of the schools in the West South Central region, in 73 per cent of the South Atlantic and 64 per cent of the Mountain section. The detailed table follows:

SCHOOL VENTILATION METHODS

Broadly Classified by Type and by Sections of the Country
(855 Schools in 84 Cities)

Section	Number of Schools visited	Window only	Per cent of Buildings Ventilated by	
			Window and Gravity Exhaust	Mechanical Equipment including Unit System
New England	124	14	56	30
Middle Atlantic	145	16	8	76
South Atlantic	110	73	4	23
East North Central	206	21	16	63
East South Central	55	49	29	22
West North Central	73	37	18	45
West South Central	33	88	9	3
Mountain	28	64	25	11
Pacific	81	58	1	41
Total	855	..	..	..
Average	..	37	18	45

* See also *Ventilation of School Buildings*, a report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, Published by Elizabeth McCormick Memorial Fund, Chicago, Illinois.

HOW TO MEASURE SCHOOL HEALTH WORK

In concluding the description of health in the school program, the following are suggested as tools by which each community may use to better advantage the resources of their health and educational departments:

1. A health habit survey, using the 15 questions listed in this chapter as a base of departure. Great care must be taken in the management of such a questionnaire. If the children look upon it as an examination given by the teacher to find out what they know, it misses its purpose, which is honest information regarding performances, rather than points for the child's credit.
2. A survey of fact knowledge along the lines of the Health Knowledge tests which have been developed by Professor Arthur I. Gates and Miss Ruth Strang at Columbia University. These are published by the Bureau of Education, Teachers College, Columbia University.
3. The preliminary inventory of health assets of a community. This will be described in the November issue of the Survey Graphic, 112 East 19th Street, New York City.
4. A more detailed and technical survey of health activities in a community along the lines already developed in the Appraisal Form for City Health Work, published by the American Public Health Association, 370 Seventh Avenue, New York City.

To be of real value the information thus collected should be used carefully by health and educational authorities to form the basis for a health service and instruction program, aimed to correct the shortcomings revealed.

APPRAISAL OF THE HYGIENE OF THE SCHOOL CHILD

The items in a school health program which are included in the Appraisal Form for City Health Work are:

- (1) The weighing and measuring of children and its educational use
- (2) The physical examination
- (3) Correction of physical defects

- (4) Sanitation of the school plant
- (5) Health Education
- (6) Recreation

The status of the subject of school health supervision may be summed up by grouping the 86 cities by thirds on the basis of the per cent attainment of the maximum score for the above items. The distribution is as follows:

	Average	Maximum	Minimum
Upper Third	62	95	49
Middle Third	43	49	37
Lower Third	27	37	1
Entire Group	44	95	1

School health work in these cities averages less than half, 44 per cent, of the standard laid down in the Appraisal Form. There is wide variation among the cities however, the highest rating being 95 per cent, the lowest 1.0 per cent. Chart 30 gives the distribution of the scores in each of the 86 cities.

THE APPRAISAL FORM FOR HEALTH OF THE SCHOOL CHILD

The attached items in the Appraisal Form upon which the rating is based are given below:

HEALTH OF THE SCHOOL CHILD (Total Points 150)

<i>Weighing</i> (15)	Value of items
a. If all children in any grade are weighed	3
Once per year, score 1 point	
Twice per year, score 2 points	
Once per month, score 3 points	
b. Underweights weighed	2
Once per 4 weeks, score 1 point	
Once per 2 weeks, score 2 points	
c. Use made of the educational value of weighing as indicated by knowledge of teacher and 70 per cent of pupils of gain or loss in last 3-5 months	10
Any grade, score 5 points	
If all grades, score 5 points additional	

Physical Examinations (40)

- a. Value of physical examination by physician based on
 - per cent of grade school population examined, and rate of examination

30

If children are examined at the rate of:

6 Per Hour or Less:				Value of items
Per cent	Points	Per cent	Points	
30	30	15	18	
25	26	10	14	
20	22	5	10	
7-12 Per Hour:				
Per cent	Points	Per cent	Points	
30	25	15	15	
25	22	10	12	
20	18	5	5	
15-20 Per Hour:				
Per cent	Points	Per cent	Points	
30	14	15	8	
25	12	10	7	
20	10	5	5	
21-30 Per Hour:				
Per cent	Points	Per cent	Points	
30	8	15	5	
25	7	10	4	
20	6	5	3	
31-40 Per Hour:				
Per cent	Points	Per cent	Points	
30	6	15	4	
25	5	10	3	
20	5	5	2	

- b. If examinations of vision and hearing, and measurement of height and weight are conducted by teacher or nurse, score 5

- c. If use is made of educational value of vision and hearing examinations, as indicated by re-seating of pupils, score 5 points additional 5

Defects, Correction of: (40)

Correction of defects per 1,000 of grade school enrollment, expressed in terms of number of children so corrected.

a. Teeth Filled			6
Individuals' Teeth Filled	100	6 Points	
	0	0	
b. Teeth Extracted			4
Individuals' Teeth Extracted	90	4 Points	
	0	0	
c. Teeth Cleaned			5
Mouths Cleaned	300	5 Points	
	0	0	
d. Glasses Fitted			7
Corrections	50	7 Points	
	0	0	

Value of
items

e. Tonsil or Adenoid Operations			10
Individuals' Operated	25	10 Points	
	0	0	
f. Heart or Lung Defects placed under physician's care			8
Cases	10	8 Points	
	0	0	

Sanitation—School Buildings (15) "

School buildings inspected and scored with reference to hygienic and sanitary conditions.

Twice per year, score 15	15
Once per year, score 10.	

Health Education (25)

- a. If teachers in any grade have knowledge of the health habits,—rest, play, cleanliness, and diet,—of the children gained by:

Daily personal inspection, score 2, or	
Reports by children, score 5	5
- b. If teachers in any grade have knowledge of results of physical and dental examinations gained by presence at examinations, or use and keeping of records, score 5
- c. All children in any grade engaged in activities (designed to increase their knowledge of personal and public health, or to develop their health habits) such as the following:
 - Inspection of places of health and sanitary interest.
 - Writing of essays on health.
 - Daily recording of health habits.
 - Making of health books.
 - Making of posters.
 - Supervision of ventilation.

If effective work is conducted throughout the entire school system:

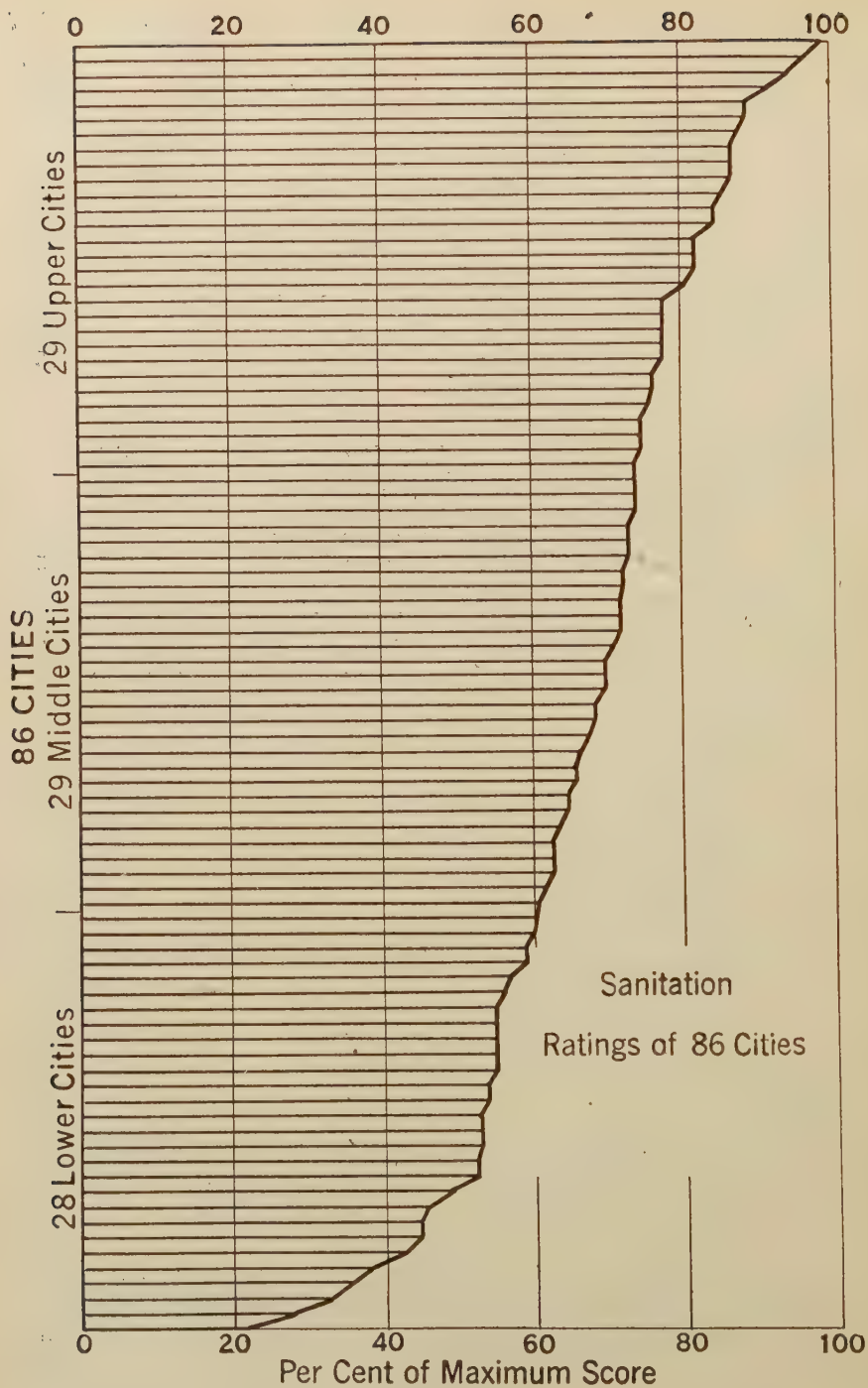
In any one of the first five grades	score 5	
In any of the grades 6, 7, 8,	score 10	
In one or more grades of both groups,	score 15	15

Recreation (15)

a. Playground Area.

Standard: Acres of playground area, within built-up portions of the city, per 1,000 total school population	10
Acre 1	10 Points
$\frac{1}{4}$	0

- b. If there is organized direction of recreation as evidenced by presence of a recreation commission, organization, or paid director, score 5 points 5



CHAPTER XI

SANITATION

Under the title of sanitation are grouped water supply, food and milk control, the disposal of liquid wastes, all items of major public health importance, together with several items which do not rank as major problems except in cases of their neglect, such as, garbage collection, fly and mosquito control, housing, comfort stations, tourist camps and general nuisance inspection.

These subjects will be treated individually in this order. However, certain data will be here presented which have a somewhat general application to many of them.

FACTORS INFLUENCING MUNICIPAL SANITATION

AREA OF CITY

The matter of area presents variations which are particularly striking and frequently quite serious. The average area of the 86 cities is 10.75 square miles, with extremes of 0.75 square miles for the city of Hoboken, and for the largest city, Pittsfield, 42.5 square miles, or 57 times greater.

The distribution of cities by area in square miles is shown in Chart 37.

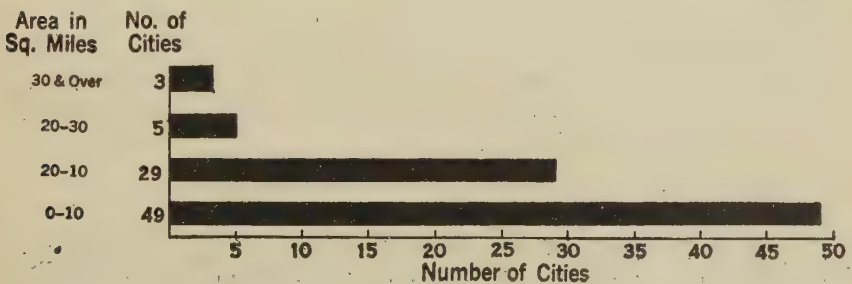


CHART 37

TOPOGRAPHY

Topography, no doubt, is a more important factor in determining the area of a city than either geographical location or period of settlement. The cities of Pennsylvania are frequently limited by the size of the valley, whereas cities in Indiana may extend freely.

The effect of these wide ranges of area upon the sanitary organization of a community may be better appreciated when the density of population is considered. Pittsfield, with its 42.5 square miles of territory, has a density of only 1,070 persons per square mile, while the density in Hoboken exceeds 90,000 per square mile. The average for the 86 cities is 5,200 persons per square mile. This congestion, which presents serious difficulties in the matter of housing, actually simplifies the problems of water supply and the collection of liquid wastes, as well as sanitary inspection generally. Just as topography may materially effect area, it also makes simple or difficult the problem of providing water mains, sewers and collection of garbage and rubbish. The problems of mosquito control and malaria are less difficult in those areas where the run-off of rain water is rapid and complete.

SEAPORTS

The seaport city frequently has been forced to recognize the rat as a sanitary problem. Not that it is less a problem in the cities of the interior, but the potential danger of plague infection is less. The ravages of the rat cost many millions annually, which improved methods of building construction and greater care in the handling of our municipal refuse would materially decrease. Our seaport cities have shown the way to attack the problem, urged on by the remembrance of their last plague experience; the inland communities should undertake elimination of the rat on purely economic grounds.

Certain advantageously situated seaport cities become vacation centers and attract tourists in great numbers, in which cases the tendency is toward high sanitary standards and the attractiveness of the city is enhanced thereby.

SATELLITE CITIES

The close proximity of some of these cities to a larger community introduces a new element in their sanitary problems. In many matters the larger city acts as a big brother, protecting the smaller

one from certain dangers. For example, if the larger community exercises careful control over its milk supply, including dairy inspection and distribution, the sanitary standard of milk production throughout the entire milk supply production area will be raised. It only remains then for the smaller city to adopt regulations closely paralleling those of the larger city to render their milk control problem relatively simple.

The problems of water supply and sewage disposal are frequently made easier by alliance with the larger city, or participation in forming a sanitary district. The cities of Highland Park and Hamtramck, which are completely surrounded by Detroit, maintain their own joint water supply and purification plant exclusive of the Detroit system, but rely upon the larger city to provide sewer outlets.

The satellite city may enjoy all of the advantages of being exclusively a residential district, or it may be filled with the objectionable industries which have been legislated out of the larger and older city and around which the smaller city has grown.

WATER SUPPLY

OWNERSHIP AND USE

In 66 of the 86 cities the water supply is publicly owned; in 2 of the 66 cities there is also a private company supplying a portion of the community, and in 20 cities the entire service is supplied by private companies. Sixty-four cities report the public supply to be universally used, while 19 report it used only by a portion of the residents. Ten of these 19 cities report 90 per cent or more using the public supply. In 3 cities information as to the extent of use could not be obtained. The general use of a public water supply, of course, depends upon its availability. In the 86 cities, 57 report the public supply to be 100 per cent available; 16 report 90 per cent or over; 10 less than 90 per cent, and in 3 cities no records were available to show the extent of the population which might be served.

ADEQUACY

The water supplies of cities of this size are, in the vast majority of cases, adequate now and for some years to come. In only 2 cities a present inadequacy was reported. Six cities are certain that they must increase their supply during the next 5 years. Three others doubt if their supply will be adequate for that period.

SOURCE

As might be expected, surface waters, with some method of treatment, form the principal source of water supply for this group of cities. In the following table the distribution as to source and methods of treatment applied to each source is shown.

Source	Total	No Treat- ment	Chlori- nation only	Filtra- tion only	Storage in Impounding Reservoir only	Filtra- tion and Chlori- nation	Sedi- menta- tion and Chlori- nation	Sedi- menta- tion, Filtra- tion and Chlori- nation
Surface	42	1	8	..	..	20	3	10
Impounded	12	1	1	2	2	2	4	..
Wells	13	7	6	..	..	..	..	..
Combination of several sources	19	2	3	..	5	7	2	..
	<hr/> 86	<hr/> 11	<hr/> 18	<hr/> 2	<hr/> 7	<hr/> 29	<hr/> 9	<hr/> 10

SPECIAL WATER SUPPLY PROBLEMS

There are several cities whose water supply problems demand special mention. Saginaw has been tolerating an extremely awkward situation for a number of years. The water for commercial and municipal purposes has been drawn from the Saginaw River, while water for domestic uses has been obtained from driven wells, put down by the city, and located at convenient street corners. There are 165 such wells from which the citizens must carry their entire drinking water supply. Within the last year, however, a thorough educational campaign, in which the school children took a considerable part, was carried on and a bond issue was voted for a filtration plant which will furnish the city with an adequate and safe supply.

Fresno obtains its water supply from wells distributed throughout the city. Twenty-seven pumping stations are maintained, which draw water from 60 wells varying from 150 to 300 feet in depth. The supply is owned and operated by a private water company.

The Massachusetts cities as a group are interesting because of their almost universal use of stored, or impounded water. The safety of the supply depends largely upon patrol of the watershed and what purification takes place as a result of storage.

CHARACTER OF RAW AND TREATED WATER

A study of the character of the raw waters shows that 37 are drawn from highly contaminated sources or carry heavy loads of silt

or trade wastes, which render them difficult to treat. In 25 cities the raw water is of such quality that satisfactory treatment is easily accomplished, and in 24 cities the source was such (either wells or impounded water from supervised shed) that treatment was required occasionally or not at all.

The character of the water supply as delivered is of high quality in 56 cities, that is, the physical quality is satisfactory at the source, or has been made so by filtration, and the bacteriological content has been reduced to 50 organisms or less, as shown by the average monthly 37 degree count, with colon bacteria present rarely or not at all. Twenty-six other cities have supplies which are safe except for the possibility of chance infection of such volume as to overload the protective treatment. In 4 cities the water is very definitely unsafe. In 2 of these cities purification works are now under way.

CONTROL OF WATER SUPPLY

There is laboratory control of the water supply either by local or state laboratory in 76 cities; 5 cities report no such control, and in 5 more information could not be obtained. Sixty-seven cities report

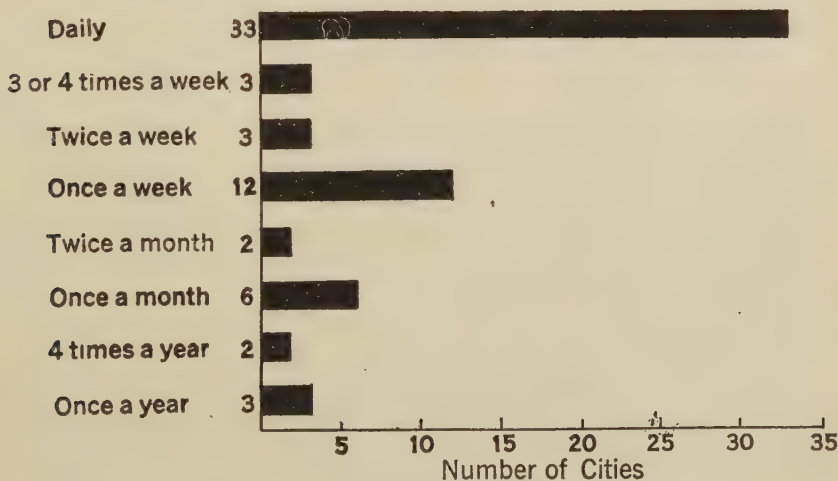


CHART 38

Frequency of Examinations

their water supply under local technical control. In 12 cities no trained supervision is provided, and in 7 others the information was not obtained.

The frequency of bacteriological examination of the supplies is shown in Chart 38, 64 cities reporting. In 5 cities no examinations were made and in 17 the information was unobtainable or lacking.

Chemical determinations are reported to be made daily in 7 cities. In each instance this means only a partial analysis, but this is made necessary because of the frequent changes in the character of the water. McKeesport and New Castle, for example, are affected by iron in the water, while in Lima and Beaumont the high turbidity of the river waters makes the treatment difficult.

PRIVATE WELLS

Twenty-two cities report no private wells whatever; 15 cities report a few; 2 cities report many, and 30 cities had no information on the subject. In the remaining 17 cities, definite information was available as to the number of such water supplies in use.

No. of Cities Reporting	No. of Wells
1	2,000
2	500
2	200-250
3	100
9	50 (or less)

The city having the greatest number of wells, 2,000, is Saginaw where the entire drinking water supply is drawn from driven wells located on the principal street corners, or from private wells.

Of the 64 cities which reported the presence of private wells, 18 could furnish no information concerning the quality of the water from these sources. Twenty-four cities report the quality as satisfactory, and 22 cities believe the wells to be unsafe. Many of these cities are making definite efforts to reduce the number of wells.

Water borne epidemics have been relatively rare among this group of cities in recent time. Only 7 cities report epidemics, which were definitely proven to be due to the water supply, in the last 5 years.

APPRAISAL OF WATER SUPPLY

The standards tentatively set up in the rating schedule for the appraisal of a city's water supply are presence of Bacteria Coli, and the per cent of dwellings receiving city water.

The distribution of rating by thirds is shown below.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	100	100	100
Middle Third	29	93	98	88
Lower Third	28	59	88	30
Entire Group	86	84	100	30

The water supply achieves a rating of 90 per cent or better in two-thirds of these cities. In fact, this public health service stands out as being more nearly done to complete satisfaction than any other. In explanation, we only need to consider: that, the safe-guarding of municipal water supplies has been receiving attention from sanitarians and increasing public support for fifty years; that in many cities money has been available for this service and it has been under trained technical direction for a number of years.

APPRAISAL FORM FOR WATER SUPPLY

Water (40 points)

			Value of Items
a.	Per cent of 10 c.c. samples of domestic supply showing Bact. Coli		15
	Per cent of Samples	0 15 points	
		5 10	
		10 5	
		15 2½	
		20 0	
b.	Per cent of dwellings receiving city water		25
	Per cent of dwellings	100 25 points	
		90 15	
		70 5	
		50 0	

MILK AND FOOD SUPPLY

THE NEED FOR CONTROL

Milk forms the principal article of diet for a considerable percentage of our population. Consequently the safe-guarding of this food supply becomes a matter of great importance.

Three aspects of milk control present themselves:—food content; cleanliness of production; and protection against contamination after production. All states and many cities have fixed standards requiring

a certain per cent of butter fat and a certain per cent of other solids. It becomes a part of the duty of the city food inspection service to see that these standards are maintained. Equally important, however, is the supervision of the sanitary production of milk. With extreme care in the handling of milk, it is possible to produce safe milk from tuberculin-tested cows. However, such milk must be handled in small quantities with unusual care as to cleanliness, by selected employees. When this extreme care is taken in the production of milk, the methods and cleanliness of the milk are usually certified to by a medical commission, and the milk is known as "certified" or "selected" milk. The cost of such care is too great to make it practical for more than a small proportion of the milk supply, and even then there is no absolute assurance that the selected milk supply may not become contaminated by an employee who may be in the infectious stage of some disease.

EPIDEMICS TRACEABLE TO MILK

During the 5 years preceding the survey there were reported to have occurred in the 86 cities 18 epidemics of communicable disease definitely traceable to the milk supply. Thirteen of these epidemics were of typhoid fever, 1 scarlet fever, 1 septic sore throat, and 1 diphtheria. Information concerning the remaining 2 types of epidemics was not obtained.

Fortunately, pasteurization, properly carried out, will destroy the germ of all diseases and many of the other organisms occurring in milk. Pasteurization should by no means be used as an alternative for the cleanest possible methods of production, but should be considered only as a safeguard added to sanitary production and distribution of milk.

SPECIAL REGULATIONS

In 83 of the 86 cities studied there is some special regulation of the milk supply. Two Pennsylvania cities and 1 Illinois city report no regulation.

EXTENT OF PASTEURIZATION

In some cities all milk is pasteurized; in others practically none. Eight cities could not furnish accurate estimates of the proportion pasteurized in 1923. One city has no pasteurization, and 1 has only 1 per cent. Five others report less than 20 per cent. Of the 78 cities

for which information could be obtained, 8 cities have 100 per cent pasteurization, and 47 have 50 per cent or more. Of the 27 cities where information could be obtained over a period of 3 or 4 years, only 9 reported an increase in pasteurization during these years of more than 20 per cent. In only 11 cities is pasteurization required of all milk not certified.

CERTIFIED MILK

Some certified milk is being distributed in 39 cities, 29 of which report that it may be obtained on 2 or more milk routes. In 36 of these cities the milk is certified to by a state or local milk commission.

PRICE

The lowest price reported for milk, other than certified milk, is 8 cents and the highest price 25 cents a quart. The prices most often quoted are 13 and 14 cents. Twelve cities report less than 12 cents a quart, 45 report from 12 to 15 cents a quart, and 26 report 15 cents or more a quart. Three cities did not furnish quotations.

Certified milk varies in price from 17 to 30 cents a quart; 26 of the 38 cities reporting, quoted prices from 20 to 25 cents.

CHECK ON PASTEURIZATION

In 61 cities all pasteurizers are equipped with self-recording thermometers. Three cities report that more than 50 per cent are so equipped. In 16 cities less than 50 per cent of the pasteurizers were equipped with thermometers. Information could not be obtained in 6 cities.

LABORATORY CONTROL

In 32 cities it was the opinion of those interviewed, or the conclusion of the surveyor after these interviews, that the laboratory control was not adequate. Laboratory control of the milk supply was considered adequate in 46 cities. Satisfactory information was lacking in 8 cities.

In 59 cities bacterial counts are made, at least monthly, of the supply of each producer. Information could not be obtained from 4 cities. In 12 cities no bacterial counts are made. The other 11 make them less frequently than once a month.

Sixty-four cities report that if unusually high counts are obtained a second sample is obtained to check the first count. Sixty cities make a special field investigation in the case of unusually high counts. Twenty-three cities state that no special field trips are made. Information could not be obtained from 3 cities.

Satisfactory reports of bacterial counts of both raw and pasteurized milk for different times during the year could be obtained from only 17 cities. The average, maximum and minimum counts for these 17 cities for raw and pasteurized milk, winter and summer months, is presented in the following table:

	Average	Maximum	Minimum
Raw Milk (May, June, July)	185,600	942,000	7,900
Raw Milk (Nov., Dec., Jan.)	82,500	280,000	5,300
Pasteurized Milk (May, June, July)	13,100	736,000	12,500
Pasteurized Milk (Nov., Dec., Jan.)	51,100	121,200	8,700

Fifteen cities report that not all of the retail milk is sold in bottles. In 7 cities the milk bottling plants are not licensed.

DAIRY FARM INSPECTION

Seventy-two cities maintain dairy farm inspection. In 66 cities this is carried on by the department of health, in 2 cities by the state department of health, and in 1 by a milk inspection association. In 3 cities information was not obtained concerning the agency that carries on farm inspection. A dairy score card is used by 53 cities.

Twenty-one cities could not give accurate information concerning the amount of milk from tuberculin-tested cows. The other 65 cities report as follows:

Per Cent of Milk	No. of Cities
100 of all	27
100 of raw	5
90-99 of all	7
80-89 " "	1
70-79 " "	1
60-69 " "	1
50-59 " "	2
40-49 " "	1
30-39 " "	0
20-29 " "	5
10-19 " "	8
1-9 " "	4
0 " "	3

Thirty-six cities consider that more than 90 per cent of their retail milk supply is properly cooled on the farm and 57 cities believe that more than 90 per cent of the supply is delivered in sterilized bottles.

INSPECTION OF OTHER FOOD SUPPLIES

Seventy-three cities have a well organized plan for inspection of other food supplies. Twenty-eight of these use a score card for scoring food handling establishments.

Sixty-six cities inspect groceries, 73 inspect markets, 75 inspect ice cream parlors and candy shops, 76 inspect hotels, and restaurants, and 70 inspect delicatessen stores.

Twenty-two cities were unable to furnish figures of the total number of food inspections for the year. Three reported no inspections. For the remaining 61 cities the number varied from 125 to 25,508, with an average of 3,844. They may be grouped as follows:

No. of Inspections During 1923	No. of Cities
More than 10,000	4
5,000 - 10,000	12
2,500 - 5,000	14
1,000 - 2,500	18
Less than 1,000	13

MEDICAL INSPECTION OF FOOD HANDLERS

Eighteen cities have some organized inspection of food handlers, 3 are just beginning it, and 4 report occasional examinations. Fifteen cities furnished figures for the number of examinations during 1923. The maximum was 4,734, the minimum 40 and the average 880. Twenty-three cities examine milk plant employees.

APPRAISAL OF FOOD AND MILK CONTROL

The Appraisal Form for city health work sets up 8 criteria for evaluating food and milk control:

Food

- a. Physical examinations of food handlers.
- b. Inspection of food handling establishments.

Milk

- a. Per cent of the milk supply pasteurized.
- b. Per cent of milk certified.
- c. Number of milk samples analyzed.
- d. Average monthly count of raw milk.
- e. Average monthly count of pasteurized milk.
- f. Per cent of milk bottled in sterilized bottles.

In the following table the cities are grouped by thirds on the basis of food control alone, and the average, maximum and minimum expressed for each in per cent of the total score obtainable.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	78	100	67
Middle Third	29	59	67	47
Lower Third	28	18	40	0
Entire Group	86	52	100	0

The average, maximum and minimum percentages of the total score obtained in milk supply for the three groups of cities are:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	83	100	63
Middle Third	29	56	63	48
Lower Third	28	28	48	0
Entire Group	86	56	100	0

THE APPRAISAL FORM FOR MILK AND FOOD CONTROL

Food-Handlers and Food Establishments (15 Points)

a. Physical examinations made for communicable disease of food-handlers in cafés, restaurants, hotels, bakeries, soft drink establishments; milk stations, and meat markets Value of
Items
5

b. Number of inspections and re-inspections of food-handling establishments per 100,000 population.

Standard: 4,000 Inspections per 100,000 Population 10

Inspections 4,000	10 Points
0	0

Milk Supply Control (60 Points)

			Value of Items
a. Per cent of the milk supply pasteurized			25
<i>Per cent of Supply</i>	95	25 Points	
	90	20	
	75	15	
	50	10	
<i>Less than 30</i>	30	0	
b. Per cent of milk supply which is of Certified, or Grade A. milk			5
<i>Per cent of Supply</i>	5	5 Points	
	0	0	
c. Number of milk samples analyzed			5
<i>Standard: 1,500 Samples per 100,000 Population</i>			
<i>Number of Samples</i>	1,500	5 Points	
	0	0	
d. Per cent of milk samples before pasteurization showing a bacterial content in excess of 500,000 per c. c.			5
<i>Per cent of Samples</i>	4	5 Points	
	7	4	
	10	3	
	13	2	
	16	1	
	19	0	
e. Per cent of pasteurized milk samples showing a bacterial content in excess of 50,000 per c. c.			8
<i>Per cent of Samples</i>	4	8 Points	
	8	6	
	12	4	
	16	2	
	20	0	
f. If all bottled milk is required by ordinance to be plainly marked to show:			
Producer, or distributor, score 2			12
Grade score 5			
Date of Production score 5			

SEWERAGE AND SEWAGE DISPOSAL

The problem of sewerage in the cities from 40,000 to 70,000 appears to have been handled in an entirely satisfactory manner in only about one-half of the cities. Forty-three of the 86 cities report 90

per cent or more of the dwellings to be connected with the public sewer system. It is to be expected, of course, that in rapidly growing communities there will be a lag between the building of houses and the extension of sewers.

With the steady decrease in prevalence of filth diseases, particularly typhoid fever, which has taken place due to the protection of municipal water supplies and elimination of flyborne infection through sewerage, our consciousness has been somewhat dulled to the potential danger of human excreta. Nevertheless, the frequent occurrence of small outbreaks in unsewered or unwatered areas within, or adjacent to, an adequately protected community, tells us clearly that the requirement for proper disposal of excreta is of the first importance to every community.

PER CENT OF DWELLINGS SEWER CONNECTED

Chart 39 shows the extent of sewer connection for 76 cities reporting.

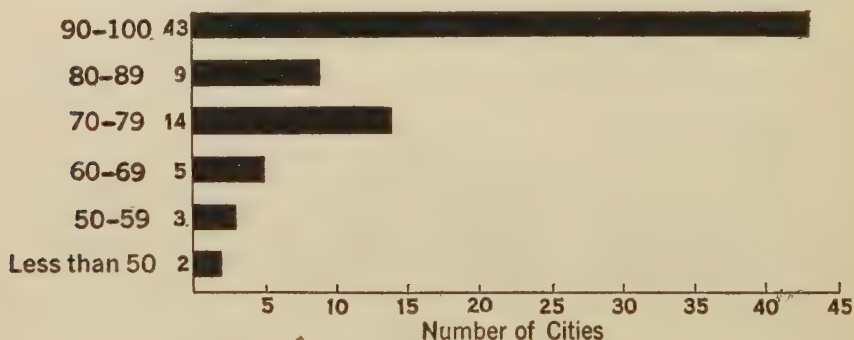


CHART 39

Per Cent of Dwellings Connected

In 80 cities there is a specific ordinance which requires that dwellings be connected with the sewers wherever possible.

METHOD OF DISPOSAL

Sewage disposal in the 86 cities is mainly by the dilution method. Sixty-six cities discharge their liquid wastes into rivers, lakes or tide-water, untreated. Twenty cities report some form of treatment of the sewage before it is discharged. Adequacy of the treatment could not have been determined without spending considerably more time than circumstances permitted, therefore, the details

of methods which are of little value except when linked with results will be omitted.

The present means of sewage disposal was characterized as satisfactory to 45 health officers; in 12 cities no information was obtainable on this item, and in 29 cities the disposal was reported to be unsatisfactory.

Of the 29 cities which report that their present disposal is unsatisfactory, only 5 cities already have treatment plants, and these are all at present inadequate in capacity. Twenty-four cities were dissatisfied with their present means of sewage disposal because of stream and lake pollution. In 3 of these cities the nuisance affects the community creating it.

CONTROL OF OUTSIDE TOILETS

In only 11 of the 86 cities is the outside toilet reported to have been completely eliminated. In 56 cities, however, there is a definite attempt to control this potential nuisance. Five cities inspect them, on complaint only, 8 cities pay no attention to this matter, and in 6 cities the surveyor was unable to obtain information as to the prevalence or control of privies.

APPRAISAL OF SEWERAGE

In scoring community health activities, but 1 item relative to sewerage has been included in the schedule. That is the per cent of dwellings which are sewer connected.

The achievement of cities in this item arranged by groups and expressed as a percentage of the total score is shown below.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	97	100	88
Middle Third	29	69	88	50
Lower Third	28	31	43	13
Entire Group	86	67	100	13

APPRAISAL FORM FOR SEWERAGE

SEWERAGE (40 Points)

Per Cent of dwellings sewer connected

Per Cent of dwellings	Points
100	40
90	30
80	20
60	10
40	0

Value of
Item
40

GARBAGE COLLECTION AND DISPOSAL

The practices employed in the collection and disposal of a municipality's garbage are exceedingly varied. The practice of collection frequently depends upon the method of disposal employed. If the disposal is by the reduction process, or by feeding to hogs, then, so far as possible, all extraneous matter must be kept out of the garbage and separate systems of garbage and rubbish collection are necessary. On the other hand, incineration demands the presence of a large amount of combustibles, while if the garbage and rubbish are used for filling in low or rough areas it is necessary to have a large amount of inert material such as ashes, which will dilute the decomposable matter to an extent that will render it reasonably unoffensive. From the standpoint of domestic sanitation and cleanliness of collection, the practice of wrapping garbage in paper is highly commendatory; this is entirely out of the question, however, when reduction or feeding is the ultimate disposal. These conditions must be determined for each city and what happens to be the general or majority practice is of little consequence. The matter of frequency of collection and by whom done is of more or less general interest.

BY WHOM COLLECTED

In 47 of the 86 cities collection service for garbage is operated by the city. In 9 of these cities the service is conducted as a function of the Department of Health. The service is arranged by municipal contract with private collector in 38 cities, and in 1 city the individual householder must make this arrangement with the collector.

FREQUENCY OF COLLECTION

Collection is made from residential districts at least weekly in 81 cities. In 5 cities the collection is less frequent; in 2 cities service is rendered only once in 2 weeks. Eighty cities report a more frequent collection from hotels and restaurants. In 2 of the remaining cities the collection from hotels and restaurants was by private contract and not at regular intervals. In the remainder the service was the same as for residences.

MEANS OF DISPOSAL

Four methods of garbage disposal are in use in the 86 cities. Thirty-nine cities report that their principal means of garbage disposal is

by feeding to hogs. Twenty-five cities operate incinerators and 19 are using the material for filling in waste areas. In only 3 cities is reduction employed as a means of disposal.

The collection of garbage is accomplished in a manner satisfactory to the health officer in 71 cities. In 11, the collection was not well organized or safely done, so that the result was not as sanitary as might be desired.

The disposal of the material caused no immediate nuisance in 68 cities. In 18, however, the health officer expressed dissatisfaction with the present service.

The means of disposal employed in these 18 cities is as follows:

Method	No. of Cities
Feeding to hogs	8
Incineration	5
Dumping	3
Reduction	2

MOSQUITO CONTROL

Organized public measures for control of mosquitoes were un-called for in 59 cities, due either to geographical or topographical position. In 27 cities such measures were required, and undertaken in 24 cities, either by the city or by a larger district such as the county.

The work is being carried on by the following agencies:

Agencies	No. of Cities
Department of Health	11
City	3
Department of Public Works	1
County	2
City and State	3
City and U. S. Public Health Ser.	3

Only 10 cities were able to furnish information as to the amount of money spent for oiling. The average for these cities for 1923 was \$395.00; the maximum was \$1,100.00 spent at Quincy, Mass.

Drainage work for mosquito elimination is under way in 10 cities. Seven report the work 75 per cent accomplished; the other 3 cities report less than 30 per cent done. The amounts spent for such work were obtainable in only 5 cities. For these it averaged \$23,000 for 1923, ranging from \$1,100 in Macon, Georgia, and Quincy, Mass., to \$87,000, for Portsmouth, Virginia.

FLY CONTROL

The initial operation necessary for the control of flies is to rigidly enforce the removal of all horse manure at frequent intervals. Sixty-two of the 86 cities have laws requiring such removal, but only 56 of these report the regulation to be enforced.

The responsibility for enforcement was scattered through a number of agencies as shown below:

Agencies	No. of Cities
Department of Health	27
Sanitary Inspector	8
Street Cleaners	2
Police	4
Department of Public Works	1
Information Unavailable or Lacking	20

STREETS

Many factors effect the proportion and type of paved streets which exist in a city. The proportion of streets paved will, in these cities, vary almost inversely with the area. Practically all of the small cities have a high percentage of streets paved. Likewise the extent of sewers influences the extent of paving. The distribution of cities by percentage of paved streets is shown below.

Per Cent Paved	No. of Cities
90—100	7
70— 90	9
50— 70	18
30— 50	25
Less than 30	27

The type of paving employed depends upon the topography and to some extent the local materials available. Hilly cities with steep grades demand rough surfaced pavements of brick or granite block, while flat cities in which street drainage must be secured by building the street surface slightly higher in the center of the block, require smooth surfaces such as obtained with asphalt, concrete, and so forth. The availability of oyster shells in some of the southern cities make shell streets practicable, while in western Pennsylvania and Ohio, brick is the material easily at hand. Considering the entire group of 86 cities, the most prevalent material is asphalt in 26 cities, brick in

25, concrete in 15, and macadam in fourteen. In 1 city, Galveston, shell roads are reported to predominate, and in the remaining 5 various materials were employed to about equal extent.

The method of street cleaning employed must be suited to the type of paving. The prevalence of the various methods in the 86 cities is as follows:

Methods	No. of Cities
Hand Sweepers	21
Machine Sweepers	24
Hand and Machine Sweepers	22
Hand Flushing	3
Machine Flushing	4
Sweeping and Flushing	11
No cleaning	1

TOURIST CAMPS

The problem of the tourist camp is a relatively new one in municipal sanitation. Of the 86 cities, 43 have such camps, either in or adjacent to the city. The city, if it is to protect its citizens and the patrons of the camp site, must provide certain sanitary conveniences as well as maintain sufficient supervision by inspection to make sure that the privileges extended to the travelers are not abused.

The practices of the 43 cities in this regard are reported to be as follows:

	No. of Cities
Sanitary toilets	35
Receptacles for garbage	40
Receptacles for rubbish	39
City water	37
Sanitary inspection of the camp	39

ZONING AND HOUSING

These cities between 40,000 and 70,000 show every condition of housing. To cover this subject in a thorough and satisfactory manner would require several days in each city, which was impossible in this survey. Only the more or less basic facts were gathered and are here presented.

Thirty-one cities report zoning laws which are intended to protect residential areas from industry and commerce. Four other cities

report laws now under consideration. Only 15 cities have made an attempt to separate single residences from multiple dwellings.

In 51 cities some form of regulation of light and sanitation of dwelling is reported. In 9 of these cities this is by means of state code. The health department assumes responsibility for housing inspection in 19 cities. In 4 others they will examine for nuisance, and in 1 the service extends to multiple dwellings only.

SANITARY INSPECTION

Sanitary or, as sometimes called, nuisance inspection is one of the old established functions of the health department. All too many laymen and even health officers still regard this service as of undue importance, and with them the making of a large number of inspections indicates excellent service. The present tendency is, however, to apply preventive measures to this service and by education and a small amount of routine service, frequently furnished by the police officers, to eliminate nuisance creating conditions before they reach the stage where a citizen's complaint is necessary. This service is handled by the health department alone in 80 cities. In 5 others responsibility is shared with the police department or division of sanitation (street cleaning, garbage collection, and so forth), and in one city the police department is solely responsible.

The number of sanitary inspectors employed varies from none to 8, as shown below:

No. of Sanitary Inspectors	No. of Cities
0	1
1	35
2	25
3	14
4	4
5	4
6	2
7	1
8	1

In Berkeley there are no special officers for sanitary inspection and this duty is assigned to the police force.

The number of sanitary inspections made depends largely upon the type of city, and scope of work delegated to this division, the details

of which were not obtainable in every case. However, the number of inspections reported in 64 cities is shown in tabular form below.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	22	21,267	84,596	3,781
Middle Third	21	2,468	3,500	1,586
Lower Third	21	661	1,585	73
Entire Group	64	8,337	84,596	73

The standard called for in the Appraisal form is 3,000 inspections per 100,000 population.

SUMMARY

The subjects just discussed comprise the most important items in municipal sanitation. There may also be local problems peculiar to each city which on occasion assume considerable importance, but the ones discussed are common to all and for that reason it is permissible to speak of the score attained by the 86 cities as a group for the entire subject of municipal sanitation. The items used in scoring and the values assigned have already been given under each topic.

The distribution of the scores for the 86 cities, expressed as percentages of the maximum score possible, is shown in Chart 36. Percentages for the cities grouped in thirds are given below.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	83	99	74
Middle Third	29	69	74	61
Lower Third	28	50	61	22
Entire Group	86	67	99	22

The average attainment of 67 per cent for this activity is the highest of the 11 major activities considered. This is exactly what would be expected from the fact that items included in sanitation are among the oldest receiving recognition in a municipal program and have reached that stage where methods of procedure are much more established than in any other field, with the possible exception of vital statistics, the importance of which is not so generally appreciated as is a safe water supply or the production of a safe milk supply.

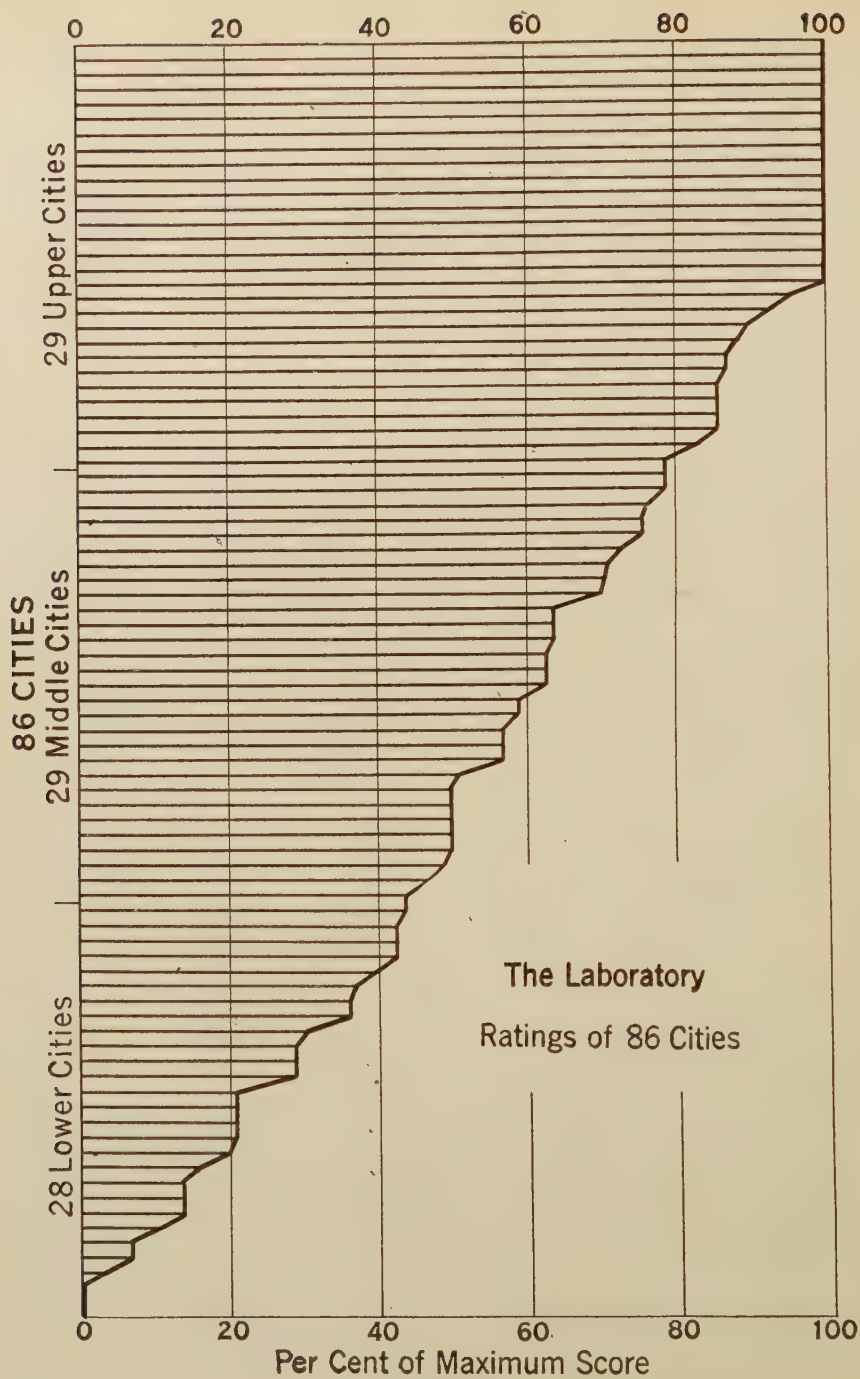


CHART 40

CHAPTER XII

THE LABORATORY

The local public health laboratory has been evolved to meet two primary needs, diagnostic and analytical, which affect the welfare of every citizen:

- (1) To provide the physicians of a city and the medical service of the health department with a free diagnostic service for such diseases as are susceptible of laboratory diagnosis.
- (2) To provide the health department's division of sanitation with the means of ascertaining by bacteriological and chemical methods the purity of the water supply, the milk supply and other food supplies.

Many other services may be performed by a public health laboratory but they are secondary in importance.

Yet even the primary needs are not recognized in all the 86 cities and like all other phases of public health administration today, the highly organized, thoroughly efficient laboratory is found side by side with the flimsiest pretence of a laboratory service. Indeed, departments of health in only 52 cities maintain their own municipal diagnostic laboratory service; all but 11 cities obtain a certain amount of diagnostic work, either in their own laboratories or through some arrangement with private, university or state laboratories located in the city.

AGENCIES MAINTAINING SERVICE

The various methods by which laboratory services are secured are best presented in tabular form as follows:

	No. of Cities
Local Municipal Laboratory (diag., milk and water)	52
Local Municipal Laboratory (milk and water only)	4
Local Municipal Laboratory (milk only)	2
Local Municipal Laboratory—partly supported by state	2
Local State Laboratory, only	3
City in contract with Private Laboratory	6

Local Private Laboratory doing some work on fees	6
Laboratory in local university in contract with city	2
Private Laboratory for diagnoses—Municipal Laboratory for milk analyses	2
Municipal Laboratory of adjacent city	1
County Laboratory and State Laboratory	1
No local Laboratory facilities	5
Total	86

The 5 cities that have no local laboratory facilities are, Cicero, Everett, Pawtucket, Terre Haute and Woonsocket, while Decatur, Cedar Rapids, Passaic and Wichita Falls have laboratories for milk and water analysis only, and Quincy and Salem for milk work only.

PERSONNEL

In the 64 laboratories supported entirely or in part by the departments of health, 43 laboratories employ 1 laboratory worker; 13 employ 2; 4 employ 3; 1 employs 4; 1 employs 5, and definite information could not be obtained from 2 cities. In the city employing 5 laboratory workers, they are listed as an assistant bacteriologist, assistant milk inspector, an examiner of milk samples, and a laboratory clerk, all under the direction of a chief bacteriologist who is also the director of all milk inspection work in the city.

The city employing 4 laboratory workers receives half its support from the state and is undoubtedly doing district state work. The city employing 5 laboratory workers is credited with 220 laboratory hours a week. The city receiving half its support from the state itself, 176 hours a week. The laboratory hours in the other cities where apparently only municipal work is done are shown below:

No. of Hours	No. of Cities	No. of Hours	No. of Cities
132	2	28	2
118	1	22	3
88	9	20	1
66	1	15	1
62	1	12	5
55	1	11	1
48	1	10	1
46	1	9	2
44	14	6	3
30	1	4	2
Information unobtainable or lacking			9

As is to be expected in the 14 cities doing 12 hours or less of laboratory work a week, the work is in most cases being done by the health officer himself, occasionally by a nurse, or in the case of milk work alone, by the milk inspector.

LABORATORY QUARTERS

The quarters assigned to these laboratories reflect the regard with which this service is held in different cities. At one extreme is a series of well-equipped rooms, and at the other, the partitioned-off end of a hall. Description of the physical aspects of these laboratories submitted by the surveyors vary from "clean, modern and well-equipped," "apparently efficiently managed," to "laboratory thick with dust and dirt," "a dirty, ill-kept meeting place for city hall loafers" and "more a curiosity shop than a modern up-to-date laboratory."

SCOPE OF SERVICE

From the laboratory reports obtained, the following list has been compiled showing the range of work:

- Diphtheria diagnoses
- Examinations of blood, feces and urine for typhoid fever
- Examinations of sputum and urine for tuberculosis
- Pneumococcus examinations
- Smears and fixation tests for gonococcus
- Wasserman
- Dark-field examinations for spirochaetes
- Rabies
- Vincent's angina
- Malaria
- Anthrax
- Intestinal parasites
- Bacteria in conjunctivitis
- Spinal fluids
- Pleural fluids
- Blood counts
- Blood cultures
- Urinalyses
- Virulence tests

Examinations of rodents for plague germs
Vaccines
Bacteriological and chemical examinations of milk,
cream and ice cream
Bacteriological, chemical and microscopical examina-
tions of water and human milk
Alcohol determinations
Examinations of dust, coal, butter, and vinegar.

While no laboratory reported examinations of each of the types of work listed above, in 59 cities the work may be classified as being reasonably complete in scope. On the other hand, 2 laboratories examined for diphtheria only, 2 for milk only and 4 for milk and water only. In fact, at least 18 may be considered to be covering only a small portion of the field of service of a well-organized laboratory.

There are certain laboratory items of personal service such as the making of urinalyses, blood counts, autogenous vaccine and examination of human milk which a public laboratory is frequently called upon to perform. These services are essential to some of the clinic work, though they have less public health significance than diagnostic work for communicable disease control. The presence of a private or hospital laboratory performing such clinical laboratory services with arrangements for the care of public clinic cases may make it unnecessary for these services to be available under the health department. The practice of charging a small fee for this service with full publicity of rates and types of service rendered will protect the service from abuse and from the crowding out of work having greater public health significance.

NUMBER OF DIAGNOSTIC EXAMINATIONS

It was possible in only 40 cities to obtain records of total numbers of diagnostic examinations made in the laboratory for 1923. In the 40 cities where records could be obtained the total number of diagnostic examinations ranges from 8,211 to 256. When these numbers are placed upon the comparable basis of examinations per 100,000 population, the range is from 12,620 to 465. In the following table the average number of diagnostic examinations per 100,000 population for the 14 cities in the upper group and for the 13 cities in the middle and lower groups is shown:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	14	9,863	12,620	5,855
Middle Third	13	4,128	5,340	3,840
Lower Third	13	1,867	2,355	465
Entire Group	40	5,401	12,620	465

Fourteen of these 40 cities report that Wasserman's are being done. When a city of this size employs only one bacteriologist it seems unlikely that sufficient ~~time~~ can be devoted to Wasserman work to insure proper care and standardization of the necessary reagents without neglect of other routine diagnostic work. In these 14 cities it is found that one of them sends its work by contract to a private laboratory, 2 to state laboratories, and 3 others employ 2 or more laboratory workers.

EXAMINATION OF MILK

In 44 cities the laboratory control of milk production is considered adequate by the surveyors. In 36 cities it is not so considered and in 6 cities the surveyors were unable to reach a conclusion from the information they could gather. Fifty-six cities report monthly bacteria counts of each producer's milk supply; 54 report a special check of unusually high counts. Only 36 cities could furnish a record of the total number of bacteriological examinations of milk samples for 1923. In the following table the actual number for the year ranges from 2,265 to 151, with an average for the upper, middle and lower third:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	12	1,493	2,265	1,151
Middle Third	12	779	1,037	453
Lower Third	12	332	445	151
Entire Group	36	862	2,265	151

Three cities receive their entire milk supply from adjacent cities where the supply is under laboratory control. The milk in one city is entirely supervised by the state laboratory which is located in that city. No bacteriological examinations of milk are made locally in East St. Louis, Springfield, Ill., Muncie, Covington, Chelsea, Everett, Holyoke, Newton, Pittsfield, Butte, West Hoboken, Chester, Pawtucket and Woonsocket.

Records of the number of chemical examinations of the milk supply could be obtained in 33 cities. In these cities the numbers for 1923 range from 1,635 to 64, four of these being definitely reported as "fat only." What constitutes a chemical examination in the other cities was not specified. The average number of examinations for the upper, middle and lower third in these 33 cities is shown below:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	11	1,297	1,635	943
Middle Third	11	619	929	447
Lower Third	11	276	445	64
Entire Group	33	731	1,635	64

No chemical examinations of milk are made in the following cities: Springfield, Ill., Covington, Everett, Holyoke, Newton, West Hoboken, Chester, Pawtucket and Woonsocket.

Ice cream is reported to be examined in 13 cities. Four cities report the examination of alcoholic beverages. The number of such examinations ranges from 589 to 78.

EXAMINATION OF WATER SUPPLY

The following table shows the frequency with which bacteriological examinations of city water supplies are made in the 86 cities:

	No. of Cities
Three times a day	1
Twice a day	1
Once a day	31
Four times a week	1
Three times a week	2
Twice a week	3
Once a week	12
Twice a month	2
Once a month	6
Once each three months	2
Once a year	3
Information unobtainable or lacking	17
No examinations	5

It is not absolutely clear that these examinations are made in every case by the city itself. Indeed, it seems more likely that in some of the cities examinations are made by the state since records of the total number of bacteriological examinations of water for the

year could be obtained in only 32 cities. In the next table the number is shown to range from 2,011 to 30.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	11	809	2,011	376
Middle Third	11	210	354	94
Lower Third	10	67	85	30
Entire Group	32	362	2,011	30

Almost all city water supplies are occasionally examined chemically by state laboratories. In the following table the frequency of chemical examinations by city laboratories is shown.

	No. of Cities
No record	28
No examination	23
Once a year	4
Twice a year	1
Several times a year	1
Once each three months	1
Once a month	10
Twice a month	1
Once a week	5
Three times a week	1
Once a day	5
By another city	6

Figures for the year could be obtained in only 5 cities and here the number of examinations ranges from 1,544 to 1.

TOTAL NUMBER OF EXAMINATIONS

In the preceding tables the records of diagnostic, milk and water examinations are given separately. It remains to present the total work accomplished in these laboratories as expressed in the number of examinations per 100,000 population. The following table gives this information for the 34 cities reporting; in 52 cities the information was unobtainable or lacking:

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	12	15,604	25,490	11,580
Middle Third	11	9,376	11,450	7,150
Lower Third	11	4,405	6,440	1,190
Entire Group	34	9,966	25,490	1,190

Cities in Upper Third: Niagara Falls, Pueblo, Pasadena, Chattanooga, Topeka, Kalamazoo, Gary, Portland, Brockton, Mobile, Springfield, Mo., and Kenosha.

It is interesting to recall that the standard chosen in the Appraisal Form for a maximum score is 6,000 examinations per 100,000 population. This standard is exceeded by 25 of these 34 cities reporting.

APPRAISAL OF LABORATORY SERVICE

The 2 criteria used in the Appraisal Form for evaluating the laboratory service are (a) scope:—the completeness with which it is organized to give the necessary laboratory service to the community, and (b) quantity:—the number of examinations performed annually.

These measures are not as well chosen as some other items in the Appraisal Form and their improvement should be considered when the form is revised.

The total scores of the laboratory services of the 86 cities on the basis of these criteria are shown in Chart 40, where they are expressed as a per cent of the total score.

The scores for the cities grouped in thirds are shown as percentages of maximum possible score.

Group	No. of Cities	Average	Maximum	Minimum
Upper Third	29	95	100	79
Middle Third	29	62	79	44
Lower Third	28	23	44	0
Entire Group	86	60	100	0

In this appraisal all of the public health laboratory service which is given in a city regardless of source (municipal, state or private contract), is credited. This results in a much higher standing for this activity than would be the case if only municipally operated public health laboratory work was considered.

THE APPRAISAL FORM FOR LABORATORY SERVICE

Below are reproduced the items and values tentatively adopted as described elsewhere for appraising laboratory service.

LABORATORY (Total Points 70)

Scope

If there is a well organized local laboratory service of a public character giving to the community the usual free service, score 35-0

Value of
Items

35

Record of Examinations

Total number of laboratory examinations per annum 35

Std.: 6,000 examinations per 100,000 population.

Examinations 6,000 35 Points

0

0

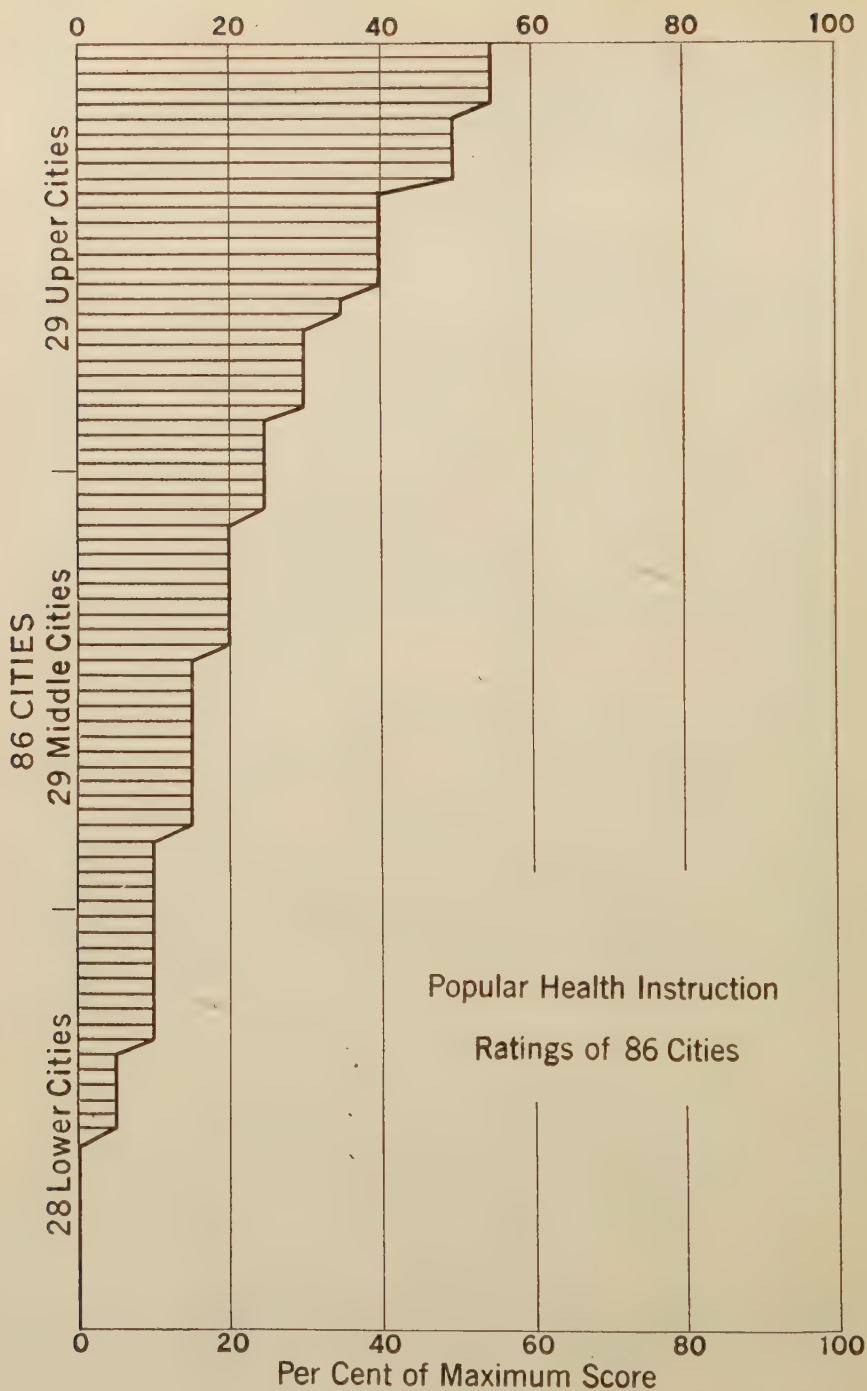


CHART 41

CHAPTER XIII

POPULAR HEALTH INSTRUCTION

Popular health instruction is here limited to those methods which are used to inform the public regarding health. The specific health education of school children is considered separately in the chapter on "The Hygiene of the School Child."

A mass of health information is poured forth for the benefit of the public, permeating books, magazines, newspapers, advertisements, movies, the air and reaching the skies. No attempt has been made to measure fully or to evaluate critically the scope or the character of this free information service. The few criteria which have been chosen in this survey as a partial measure, have at least the merit of being somewhat objective.

The development of a technique in health teaching and an enthusiasm in transmitting health knowledge has been one of the striking achievements of this decade. Methods must be worked out to test the effectiveness of this publicity so that we may know how to spend money, especially when there is little to be spent, to the utmost advantage. Those who pay taxes and those who make donations may well ask for proof that our publicity efforts are of value, and the health officer must have more for proof than tradition or the comment of a well-wisher.

The information gathered on this subject includes newspaper publicity; the publication of reports, bulletins and pamphlets; the use of exhibits and other graphic educational materials; the development of lectures and courses of instruction; and the organization of adult interest in child health. This of course only scratches the surface of a vitally important American activity.

NEWSPAPER PUBLICITY

The newspaper is the most important medium of communication between a health officer and his public. Without detracting from the importance of such established means of communication as the annual

report, monthly bulletins, pamphlets, lectures, exhibits,—each of which has undoubtedly, even though undetermined value, the health officer must depend upon the local press if he is desirous of reaching the public systematically. Unfortunate is he who fails to understand and intelligently use the medium of the press which lies so ready at hand, and without cost. In cutting off himself and his work from the daily contact with his clientele he loses his biggest chance to interpret, explain, justify and popularize his work, interest, advise and educate his people. Newspapers are rarely so blindly directed that they do not recognize the public's interest in matters of health, and when by his attitude a health officer convinces an editor of his frankness, sincerity and cooperativeness, a treasure mine of mutual assistance is found.

Local newspapers may bring the health officer's message to their readers in a variety of forms. The most acceptable form, of course, is news. The amount of bona fide news that develops in even the small city health department is far more than is imagined. It requires a recognition of news on the part of the health officer to utilize this channel of information effectively and a cooperative reporter eager to respect the niceties of scientific truth, to utilize it. The time and thought given by the health officer to this subject in anticipation of the daily visit of the reporter will be amply repaid. The monthly and annual reports may be used by the health officer as a basis for special articles of exceeding interest. Too often these reports are simply technical without interest to the layman. Such reports alienate the interest of the newspaper editor, but interpreted and humanized by the health officer, with the assistance of the reporter, they are welcomed and become valuable assets to the newspaper and its public. Editorials, written or suggested by the health officer, or members of his board, have their special value at times of particular interest in controversial matters. Health cartoons may likewise have their place especially when their use is timely and appropriate. Columns devoted to personal health advice on how to keep well, written by authorities and widely syndicated, are now an almost universal element in newspapers today and lie beyond the scope of the local health officer.

An admirable discussion of effectiveness and ineffectiveness of health publicity is contained in "Publicity for Social Work," a volume in preparation by the Routzahns, to appear shortly from the Russell Sage Foundation. No one interested in the subject of health publicity can afford to miss this book.

In the surveyed cities, the evidence collected in regard to newspaper publicity relating to public health, is summarized in the following table:

Type	No. of Cities Yes	No. of Cities No	Information Lacking
Newspaper promoting Health	65	15	6
Publicity of Health Achievements	71	12	3
Publicity of Milk Bacteria Counts	34	52	0
Publication of Birth Reports	47	39	0
Publicity on Local Disease Situation	74	10	2
Syndicated Health Columns	56	30	0

At least 65 cities report that they have one or more newspapers which may be said to be promoting health, while publicity of health achievements is claimed in 71 cities. In 30 cities the statement is made that the newspapers print everything that is given them by the health officer. In other cities (Sacramento, Topeka, Rockford, Stockton and many others) the health news is actively solicited. In Saginaw a special health column was conducted by the health officer, while complete monthly reports of the health officer were printed in the weekly "Highland Parker." An instance of exceptional newspaper publicity in a smaller town than those included in the 86 cities is worthy of mention. The evidence in the case is presented in Monograph No. 8, general series No. 3, of the Framingham Tuberculosis and Health Demonstration by D. B. Armstrong, M.D., and forms a convenient source-book of one type of health publicity.

Publicity of the results of routine sanitary inspections of the milk supply, of dairy farms, restaurants, and other food handling establishments are frequently published in the form of relative ratings. The survey inquired only as regards the publication of average bacterial counts of the milk supply and found 34 cities had adopted this procedure. In Texas the libel law is regarded as a bar to publicity of this kind. In one city the publication was discontinued because the best dairies obtained the highest counts. Another city reported that samples were not secured with sufficient frequency to make the reports fair and representative.

Births as reported are published in 47 cities. While this doubtless exerts a beneficial effect upon securing prompt birth reporting it is not looked upon with favor in some communities where it is thought that the publishing of such information may give occasion for its misuse by commercial concerns.

Publicity on the local disease situation was reported to be current practice in 74 cities. In one city the news regarding the smallpox situation was refused publication.

Syndicated health columns were reported in 56 cities, 10 different writers being mentioned.

PUBLISHED ANNUAL REPORTS

Lack of funds may unhappily prevent the publication of a health report but this should not be an excuse for failure to typewrite or mimeograph a complete statement of work accomplished during the year. There is probably no city which does not require the health officer to make a report annually to the mayor, if not to his board of health, but in a considerable number of cases this report is a fragmentary statement of a few facts covering only 1 or 2 pages of type-writing. In 34 cities health department reports are published, but 10 of these are found only in a voluminous city year book. In 9 additional cities typed copies of annual reports were obtainable.

The 24 annual reports that are published separately present an interesting variety. They differ widely from each other in size and scope, in interest and value, in quantity and cost. One makes bold to state that few have ever considered an annual report to be other than a bare statement of work accomplished, and statistics accumulated. As such indeed it has a definite value but this is lessened by the lack of standardization of definition of services and of the methods of recording. The omission of important data, such as financial statements, population data, and the like, is also a frequent deficiency. But most striking is the obvious lack of any attempt to make the report an interesting, educational document worthy of the attention of the citizens and the public health workers throughout the country. There are, happily, a few notable exceptions which deserve mention. East Orange publishes each year an annual report which is at once an admirable statement of its health work and a persuasive educational document. The 1,000 copy edition of its 60-page report costs \$218. Its 1924 report incorporates the Appraisal Form for City Health Work, and applies it to its local problem in an interesting manner. Winston-Salem devotes 95 pages of analytical and constructive study to its annual health work, even calculating in terms of unquestioned monetary value its annual health promoting services. Its 2,000 copies cost \$500 a year. Several Massachusetts cities also publish, at con-

siderable expense, detailed reports which contain much valuable information. In contrast to these more expensive reports is a highly condensed summary of the health work of Topeka which publishes 6,500 copies of a 16-page 3 x 9 inch leaflet, for \$100, while the least expensive printed report of which there is record is Sacramento's 300 four-page report for \$22.

It would seem from a consideration of these reports that here is a subject that requires intelligent study to determine what purpose such a report may most effectively fulfill, and how this may be accomplished, what a reasonable cost would be, how effective use of it may be obtained, and how much time a health officer should permit himself to spend upon his report.

MONTHLY BULLETINS

Monthly bulletins are printed in only 10 of the 86 cities. They are usually a 4-page statistical report without any educational features. Johnstown prints 100 copies for \$3.60; New Britain and Brockton, about 500 copies for \$20; Lincoln publishes 175 copies of a 16-page report for \$32, and Beaumont, 2,400 copies of 6 pages for the same figure. There is little justification for expenditure of funds for so slight an educational return as must come from most of these reports. The New Britain and Lincoln bulletins, however, have an undoubted educational value. Mention should also be made of Racine whose health officer at a trifling cost prepares a one-page weekly statement of decided educational value which is multigraphed and effectively distributed.

HEALTH PAMPHLETS

The health departments in 16 of the cities surveyed used their own resources to prepare and print leaflets, circulars, pamphlets and the like on the subject of health, although in only a few cities are the details sufficiently complete to indicate the extent and cost of so doing. Jackson distributed 15,000 leaflets, largely through department store packages, but they were leaflets of the state department of health. Two cities report the distribution of 1,000 leaflets, one city 500.

The numerous voluntary organizations use this method more extensively. In 40 cities one or more agencies were reported to be distributing health literature, sometimes their own, but more often

the educational matter prepared by national health organizations, life insurance companies, and state departments of health.

The practice of the health departments of the 86 cities in regard to the publication of reports and health literature is summarized below:

	No. of Cities Yes	No. of Cities No	No. of Cities Information Lacking
Published Annual Report	37	47	2
Published Monthly Bulletins	10	72	4
Health Pamphlets	16	68	2
Mailing Lists for Reports	20	63	3

In 40 cities health literature is prepared or distributed by voluntary agencies.

PUBLIC HEALTH EXHIBITS AND EDUCATIONAL MATERIAL

The graphic presentation of public health knowledge and ideas by means of exhibits may be a valuable means of reaching a large public. Much depends upon the character of the exhibit and the demonstrating personnel; much upon the time and place, and competing interests. Too often a few posters on health, poorly displayed under unfavorable conditions, are expected to do for the general public what the "tongues of men and angels" have failed to do. On the other hand highly organized health shows at their best are expensive in money and in time and require the mobilization of the entire community to justify such an expensive effort.

How the cities utilize these educational methods is revealed in the following table:

	No. of Cities Yes	No. of Cities No	No. of Cities Information Lacking
Permanent Health Exhibits Maintained	10	74	2
Exhibit held in last 2 years	34	50	2
Lantern Slides Used	19	9	2
Charts Used	29	9	2
Posters Used	34	9	2
Motion Pictures Used	28	10	2
Health Teaching in any Clinic	37	44	5

Permanent health exhibits are infrequently found in the smaller cities. Ten cities report having such exhibits. In only 4 cities did they impress the surveyors. However, public health exhibits were

reported to have been held in the course of the preceding 2 years in no less than 34 cities. In many cities they were employed annually at the county or state fairs.

Anent the various types of materials intended to carry information on health to the public it was found that lantern slides, charts, posters and motion pictures were available although not always used in from 30 to 45 cities. Posters seemed to be in widest use; 34 out of 45 cities, in which they were available, used them. Charts were used in 29 cities, motion pictures in 28, and lantern slides in 19 cities. These were practically always for use free of charge.

EXTENSION COURSES ON HEALTH, AND PUBLIC LECTURES

The information gathered in the survey regarding the extent to which local and state efforts were being made to advance those interested in the field of health by means of extension courses and public lectures is tabulated below:

	No. of Cities Yes	No. of Cities No	No. of Cities Information Lacking
Extension Course by State Dept. of Education	9	77	0
Extension courses by Other Organiza- tions	11	71	4
Lectures by Local Department of Health	27	59	0
Lectures by State Department of Health	25	61	0
Lectures by Others	20	59	7
Lectures by two or more of above	45	38	3
Lectures illustrated	14	20	11

The state departments of education gave extension courses in 9 cities and other organizations did the same in 11 cities. Lectures on health were recorded in 45 cities, about equally divided between the local department of health and state department of health and other organizations. The lectures were illustrated in 14 cities. While this may be a long way from the accomplishment of the popular health instruction of the future, one has only to recall that 15 and 20 years ago public lectures on health were an almost unheard of event. For contrast, in Saginaw, 166 talks were given by the local department of health and 12 by the state department of health in 1923.

ORGANIZED ADULT INTEREST IN CHILD HEALTH

The results in the organization of adult effort in behalf of the child are striking examples of what may be accomplished through popular instruction of lay adult groups. The problems and needs of crippled children have been presented to the men's clubs with results familiar to all. The need for a closer alliance between the home and the school for the welfare of the school child resulted in the formation of the Parent-Teachers Association for this sole purpose.

In this survey not a city was found which did not have at least one adult group contributing to the welfare of the child. Such clubs, societies and associations as exist in the community are easily interested in one or another phase of health and are indeed in particularly favorable positions to contribute substantially to its promotion.

THE PUBLIC LIBRARY

One of the richest sources of popular instruction is the public library. This is no less the case in the field of health education than in other fields of knowledge. In the smaller cities especially where little money is set aside for the purchase of new books, the library welcomes suggestions from all exponents of health, such as the health department and the department of education, as to how best to spend that little. The librarian is glad to know of a new and authoritative book on nutrition or of a book on methods of teaching health or that books are wanted on some aspect of sanitation, mental hygiene, recreation or habit training. In turn the various health workers seek the library for sources of information, asking for reference lists in their own field of work. When, for instance, a club leader has a paper to prepare on child health, the alert librarian furnishes recent magazine articles, clippings, pamphlets and bulletins selected from government, state and city publications and from reports of public and private organizations.

The modern public library is not merely a place where information is stored. It is a thoroughly alive and active distributing center, constantly giving out information, and always on the watch for ways of serving in health matters as in all other ways. If the community is to be won over to some special health cause the library stands ready to furnish ammunition to the press, to speakers both professional and

lay, and to discussion groups. As an example of this the public library in Syracuse recently published a list of books on community health for the Milbank Demonstration. The National Health Library helped in the selection of these books, which the Syracuse library listed and placed in circulation.

Travelling libraries are indispensable to rural health workers, who in turn have opened up new fields of usefulness to the libraries by asking for materials to meet ~~their~~ special needs.

The survey while disclosing a surprising quantity of books relating to the field of health, revealed a lack of knowledge of the many ways in which the public health workers and the public libraries generally might be far more helpful to one another. Few of the health departments, for instance, had ever made demands on the libraries for definite service and many of the libraries had never assembled their materials for the use of health organizations. Both the library and the health officials secure their funds from the same public whom they both aim to serve to the best of their abilities.

APPRAISAL FORM FOR POPULAR HEALTH INSTRUCTION

The tentative Appraisal Form calls for the following 6 criteria of activity in the field of popular health instruction:

	Points
a. Educational health pamphlets	2
b. Weekly health bulletins	2
c. Monthly health bulletins	5
d. Constant newspaper publicity	6
e. Public lectures	2
f. Showing of motion pictures on health	3
Total	<hr/> 20

It is obvious that these criteria represent only a few of the many expressions of activity in this field and may not be entirely adequate or representative. In any event, the desirability of defining the standards by which the items shall be scored is very evident. Owing to the absence of such standards it is probable that individual judgment has played a larger part in the rating of this section than in other sections.

THE APPRAISAL OF POPULAR HEALTH INSTRUCTION

The comparative ratings of the 86 cities, based on the Appraisal Form, are shown graphically in Chart 41. The picture which is presented is less impressive than those shown in a similar manner for the other major activities. The highest rating that is attained is 60 per cent of the maximum score and 13 cities receive no credit whatsoever. The median score is 15 per cent of the maximum.

The percentage scores attained by cities for each of the 6 items called for in the appraisal of popular health instruction are given for the upper, middle and lower thirds of cities, in the following table:

Activity	Upper Third Average	Middle Third Average	Lower Third Average	Entire Group Average
Health Pamphlets	55	0	0	20
Weekly Health Bulletins	3	0	0	1
Monthly Health Bulletins	41	0	0	14
Constant Newspaper Publicity	74	39	7	38
Public Lectures	72	7	0	30
Motion Pictures	20	0	0	7
All Activities	40	17	4	20

The status of popular health instruction as measured by the above criteria cannot be a source of satisfaction. The average attainment of all cities is only 20 per cent of a maximum score, the lowest of the 11 major health activities. The upper third of cities attain 40 per cent, the middle group 17 per cent, the lower third but 4 per cent. The ratings of the 3 groups for each of the 6 items show that newspaper publicity leads in order of attainment, followed closely by public lectures. Health pamphlets lead monthly bulletins, although both of these activities are limited to the upper third of cities, as are motion pictures.

CHAPTER XIV

PUBLIC HEALTH NURSING

The development of public health nursing has been rapid as was inevitable when the realization came that individual health instruction was destined to be the dominant note of the future public health movement, and that the public health nurse in the course of her care of the sick was preeminently the chosen messenger of health knowledge. Her persuasiveness in leading one to follow the advice of the doctor and in observing the laws of healthy living, has added a new ally to the forces that make for health. But the vast majority of people learn only through demonstration and practice. The daily contact with the friendly and understanding nurse whose hands are skilled in the art of nursing and whose patient explanations and practical demonstrations make easy what before was difficult, has proven to be the means of renewing courage and restoring health to the multitude for whom the burden of ignorance and ill-health would have proved too much.

But with rapidity of growth has come an almost helter-skelter development. The number of "specialized" types of public health nursing, the variety of organizations that "go in" for nursing, the lack of standards of service, the absence of trained supervision, the incompleteness of records of work, are all evidences of this hasty growth, forced, to be sure, by the public's demand for this now indispensable health promoting service, and the creation of new special interest organizations instead of the expansion of those already in existence.

In the present state of public health nursing activity it must be recognized that it is impossible to determine in a brief survey such important questions as quality of service, unit costs, the effectiveness of the supervision provided, or even with sufficient certainty the degree to which generalization of nursing service by each nurse is practiced. The scope of the present chapter embraces only such aspects of the nursing problem as are represented by the number of organizations employing nurses, the number of nurses employed and

the types of nursing engaged in. But even from these restricted fields of inquiry much valuable light can be thrown on the nature and extent of public health nursing in the 86 cities. The universality of the nurse in public health will be shown, the weakness of supporting

TABLE A

Cities with One Organization Employing Nurses

8 Cities
8 Organizations
43 Full-time Nurses and
5 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
5	DH	..	....	....	..	...	Springfield, O. (M), Haverhill (M), Tampa (M), Augusta, Stockton (M)
2	..	..	....	ARC	..	...	Shreveport, Wichita Falls
1	..	..	....	....	..	Oth	Butte (M), <i>Tuberculosis Society</i>
8	5	..	....	2	..	1	

Key to Tables A to F inclusive

DH — Department of Health
DE — Department of Education
PHN — Nursing Organizations
ARC — American Red Cross
St — State Department of Health
Oth — Other Private Organizations (not primarily Nursing Associations)
M — Metropolitan Nurses

many small nursing units as contrasted with a single large unit will be pointed out, and the lack of effective supervision and the need of gradually increasing both the quality and the quantity of nursing service will be apparent.

TYPES AND VARIETIES OF ORGANIZATIONS EMPLOYING NURSES

A conception of the extraordinary variety both in the type and in the number of organizations which employ public health nurses in the 86 cities may be best gained from Tables A to F inclusive. Here all the 86 cities are shown to have a nurse-employing organization. Eight report 1 organization, 3 report 6 organizations, while the most frequent arrangements are 2 organizations in 31 cities and 3 in 25 cities. Thirty different combinations of nurse-employing organiza-

tions are reported. If the special Metropolitan Life Insurance Company nurses were considered, the combinations would be 40 in number. It will be noted that in addition to the 5 most usual organizations that

TABLE B

Cities with Two Organizations Employing Nurses

31 Cities
 9 Different Combinations of Organizations
 60 Organizations
 259 Full-time Nurses and
 13 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
5	DH	DE	....	....	..	....	Pasadena (M), Macon (2M), Highland Park, Kalamazoo (M), Niagara Falls (M)
6	DH	..	PHN	....	..	....	Berkeley, Portland (M), Everett, Fitchburg, Newton, Pittsfield
1	DH	..	....	ARC	..	....	Mobile (M)
1	DH	..	....	....	St	....	Montgomery (M)
6	DH	..	....	....	..	* Oth	Cicero (M), Chelsea, Jackson, Lansing, Saginaw (M), Winston-Salem (M)
5	..	DE	PHN	....	..	....	Cedar Rapids, Davenport, Lexington, Brockton, Woonsocket
3	..	DE	....	ARC	..	....	Pawtucket, Beaumont, Galveston
3	..	DE	....	....	..	* Oth	Bay City, Springfield, Mo. (M), McKeesport (M)
1	..	..	PHN	....	St	....	York
31	19	16	12	4	2	9	

* The names of the organizations in these cities are as follows: Cicero, Welfare Center; Chelsea, Woman's Public Safety Committee; Jackson, Tuberculosis Assn.; Lansing, County Tuberculosis Assn.; Saginaw, Tuberculosis Assn.; Winston-Salem, Associated Charities; Bay City, Civic League; Springfield, Mo., Green County Health Assn.; McKeesport, Milk and Ice Fund.

employ nurses, namely, the department of health, department of education, the nursing associations, American Red Cross and state department of health, there is a group of other agencies not primarily nursing organizations. Of these there are 54 in number, ranging from none in 44 cities to 3 in 3 cities. While there are doubtless many

reasonable arguments for the existence of these separate organizations, it does not seem consistent with modern conceptions of economy and efficiency that so many small independent nursing units should

TABLE C

Cities with Three Organizations Employing Nurses

25 Cities
9 Different Combinations of Organizations
75 Organizations
241 Full-time Nurses and
11 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
8	DH	DE	PHN	....	..	....	Charlotte, Lakewood, Roanoke, Topeka, Rockford, Quincy, Passaic, Mt. Vernon
2	DH	DE	....	ARC	..	....	Lima, Fresno (M)
1	DH	DE	....	....	St	....	Altoona (M)
8	DH	DE	....	....	..	* Oth	San José, Malden (M), Lincoln (M), Hoboken (2M), Perth Amboy (M), West Hoboken, Binghamton (M), Portsmouth
1	DH	..	....	....	St	Oth	Kenosha (M), <i>Service League</i>
1	..	DE	....	....	..	Oths	Covington (2M), <i>Penny Clinic and County Tuberculosis League</i>
1	..	DE	PHN	....	St	....	Lancaster
2	..	DE	PHN	....	..	Oth	Muncie and Terre Haute, <i>County Tuberculosis Assns.</i>
1	..	..	PHN	....	St	Oth	East St. Louis, <i>County Tuberculosis Assn.</i>
25	20	23	12	2	4	14	

* The names of the organizations in these cities are as follows: San José, Good Cheer Health Center; Malden, Industrial Aid Assn.; Lincoln, County Tuberculosis Assn.; Hoboken, County Tuberculosis Assn.; Perth Amboy, County Tuberculosis Assn.; West Hoboken, County Tuberculosis Assn.; Binghamton, Endicott-Johnson Corp.; Portsmouth, City Mission.

try to work in the field which it would seem one or two organizations might more effectively serve.

Only 5 cities perform all the public health nursing that is done (except that by the Metropolitan Life Insurance Co.) through the

department of health. Their names appear on the first line of Table A. In 4 of these cities there is no bedside care of the sick except that performed by the Metropolitan. Augusta is the one city whose health department covers exclusively both bedside care of the sick and other types of public health nursing. On the other hand 19

TABLE D

Cities with Four Organizations Employing Nurses

15 Cities
6 Different Combinations of Organizations
59 Organizations
152 Full-time Nurses and
5 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
1	DH	DE	PHN	ARC	..	....	Elmira
5	DH	DE	PHN	....	..	* Oth	East Orange, Charleston, Atlantic City, New Britain, Decatur
2	DH	DE	....	ARC	St	....	Racine (M), Johnstown
3	DH	DE	....	ARC	..	* Oth	Wheeling, Springfield, Ill., Sacramento (M)
3	DH	DE	....	....	..	Oth	Little Rock (2M), Hamtramck, Huntington (M)
1	..	DE	PHN	....	St	Oth	Chester, <i>Child Welfare Center</i>
15	14	15	7	6	3	15	

* The names of the organizations in these cities are as follows: East Orange, Tuberculosis League; Charleston, Ladies Benefit Society; Atlantic City, Child Federation; New Britain, Tuberculosis Relief Society; Decatur, Community Chest; Wheeling, Associated Charities; Springfield, Ill., Tuberculosis Assn.; Sacramento, Tuberculosis Assn.; Little Rock, Tuberculosis Assn.; Sacramento, Tuberculosis Assn.; Little Rock, Tuberculosis Assn. and Junior League; Hamtramck, Detroit Tuberculosis Assn. and Tau Beta Society; Huntington, Tuberculosis Assn. and Baby and Maternity Center.

cities have no health department nurses, while the health departments of Brockton and York secure their nursing service from the local nursing association. Departments of education carry on the school nursing in 61 cities, leaving it to be done by the department of health alone in 17 cities, and jointly with a nursing association in 3 cities. In 2 cities it is done by the American Red Cross, in 1 by a nursing association alone, and in 2 cities none is done at all.

HEALTH SURVEY OF 86 CITIES

TABLE E

Cities with Five Organizations Employing Nurses

4 Cities
 3 Different Combinations of Organizations
 20 Organizations
 34 Full-time Nurses and
 4 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
1	DH	DE	....	ARC	St	Oth	New Castle (M), <i>Child Welfare Society</i>
2	DH	DE	....	....	..	Oths	Gary (M), <i>County Tuberculosis Assn., Neighborhood House and M. E. Friendship House</i> ; Chattanooga (2M), <i>Tuberculosis Assn., Good Will Center and Milk and Ice Fund</i>
1	DH	DE	PHN	....	St	Oth	Holyoke, <i>Municipal Child Welfare Commission</i>
4	4	4	1	1	2	8	

TABLE F

Cities with Six Organizations Employing Nurses

3 Cities
 3 Different Combinations of Organizations
 18 Organizations
 25 Full-time Nurses and
 0 Metropolitan Nurses

No. of Cities	Types of Organizations and Number of Each						Name of Cities
	DH	DE	PHN	ARC	St	Oth	
1	DH	DE	....	ARC	St	Oths	Pueblo, <i>Tuberculosis Society and Child Welfare Assn.</i>
1	DH	DE	PHN	....	..	Oths	Salem, <i>Tuberculosis League, House of Seven Gables and Lydia Pinkham Mem.</i>
1	DH	DE	PHN	....	St	Oths	Bethlehem, <i>Tuberculosis Assn. and Baby Health Center</i>
3	3	3	2	1	2	7	

THE EXTENT OF NURSING

THE NUMBER OF NURSES

The number of full-time public health nurses and supervisors or directors in the 86 cities is 794, or an average of 9.2 per city. When these cities are arranged in three groups according to the size of the nursing staff employed, the upper third of cities average 13.5 nurses, the middle third 8.7 and the lower third 5.3. The maximum is 20 nurses, the minimum 2. These facts are tabulated below:

Group	No. of Cities	Total Number	Average Number	Maximum	Minimum
Upper Third	29	391	13.5	20	11
Middle Third	29	252	8.7	10	7
Lower Third	28	151	5.3	7	2
Entire Group	86	794	9.2	20	2

Cities in Upper Third:—Binghamton, Wheeling, Brockton, Rockford, East Orange, Charlotte, Pawtucket, Winston-Salem, Atlantic City, Fitchburg, Passaic, Portland, Mt. Vernon, Springfield, Ill., Terre Haute, York, Topeka, Augusta, Kalamazoo, Lincoln, New Britain, Stockton, Bethlehem, Chattanooga, Holyoke, Lancaster, Perth Amboy, Quincy and Woonsocket.

Supervisors or Directors—Included in the above tabulation are 50 nurses who were reported as supervisors or directors. Since in so many instances the supervisors and directors were engaged in active field work they have been included among the field workers.

Metropolitan Life Insurance Company Nurses—There have also been included 38 nurses employed separately by the Metropolitan Life Insurance Company. This has been done since it was impossible to determine the work accomplished for the Metropolitan in the remaining cities where the company purchases nursing service from the existing nursing organizations, and therefore consistency demanded that their specially employed full-time nurses should be included.

Industrial Nurses—In one instance industrial nurses have been included for the reason that so extensive a public health nursing service is enjoyed by the families employed. Nine nurses serve the thousands of Binghamton families employed by the Endicott-Johnson Corporation. There are 11 additional nurses in Binghamton, thus giving 20 nurses in this city. It is regrettable, in view of the exceptionally large number of nurses that there seems to be a lack of co-

ordination between the various nursing services which results in duplication and lessened efficiency.

Part-time Nurses—In addition to the full-time public health nurses and supervisors, as tabulated above, there were 30 part-time nurses. One part-time nurse was recorded in 24 cities and 2 part-time nurses in 3 cities. Nine of these nurses were nurses employed by the state department of health giving only part of their time to city health work.

Student Nurses—Student nurses under trained supervisors are gaining experience which will greatly increase their value in the future, in a number of communities, but they have not been counted in the above tabulations. Nineteen student nurses were reported in 6 cities, Holyoke, Pittsfield and Woonsocket reporting 1, Newton 3, Portland 4 and Galveston 9. In addition the affiliation of the Berkeley Nursing Unit with the university nursing course results in the availability of from 15 to 20 student nurses for part-time field work.

NUMBER OF NURSES BY CITIES

The data as to the number of nurses in the cities have been tabulated below in another manner, so as to show the number of cities with 1 nurse, the number with 2 nurses and so on.

No. of Nurses	No. of Cities	No. of Nurses	No. of Cities	No. of Nurses	No. of Cities
1	0	8	11	15	3
2	3	9	10	16	1
3	3	10	6	17	2
4	1	11	7	18	1
5	2	12	5	19	0
6	11	13	5	20	1
7	10	14	4	—	—
Total				794	86

A COMMUNITY'S NURSING NEEDS

A community's nursing needs have been carefully considered on page 557 in this report in the Plan of Organization of Community Health Work for a city of 50,000. In this plan the evidence is presented to show why a community wishing to provide a reasonable

minimum of nursing service for each of the principal branches of public health requiring nurses, must have from 22 to 29 nurses. However, the plan points out that this number is beyond the educational as well as the financial preparedness of many cities of this size today. Furthermore, it indicates that many cities fail to provide this nursing service either because its nurses do not attempt to give service in certain fields of work, or because the number of individuals cared for or the extent of service to each patient, is curtailed. The desirability of expanding slowly, with due attention to assimilation of new personnel and new types of work, is also emphasized.

The distance from the goal of a reasonably adequate nursing service on the part of our 86 cities is very marked. As the preceding tables reveal, the average number of nurses in the upper 29 cities is only 13.5 and only 8 cities have over 14 full-time nurses. Although it is usual to refer to the number of nurses on a comparable basis of 100,000 population, only a small error is committed in this case in speaking of the actual number of nurses, since the populations of the 86 cities do not vary at the most more than 20,000 and for the most part not more than 10,000 from the standard of 50,000 adopted in the above mentioned plan. However, when the number of nurses per 100,000 population is calculated the average number for the 86 cities is 16.6. The average numbers per 100,000 population for the three groups of cities are 24.1, 16.1 and 9.5, respectively. The maximum is 33.2 and the minimum 2.2.

NUMBER OF NURSES BY ORGANIZATIONS

Equally significant is the presentation of facts showing the size of the nursing staffs of the different types of organizations. The story the following table presents may well raise the question as to whether the organization of nursing work is as economical and efficient as it might be.

The table on the next page reveals that one nurse only is employed by 92—over one-third—of the organizations. Adding to this the 48 organizations each employing 2 nurses and the 44 organizations each employing 3 nurses, there are 184 organizations responsible for 320 nurses. This means that 71 per cent of these organizations employ 40 per cent of the nurses. If the cost of administration, overhead and duplication of these 1, 2 and 3 nurse organizations, usually without

trained supervision, is considered the desirability of a more centralized, better coordinated, better supervised nursing service is apparent. More and better work at an actually smaller expense can be provided if nursing services would pool their nurses and share the cost of trained supervision.

NUMBER OF FULL-TIME NURSES AND SUPERVISORS IN VARIOUS TYPES OF ORGANIZATIONS

Organization	Number Full-time Nurses and Super- visors	Number of Organizations with														Total Number of Organi- zations
		1 N	2 N	3 N	4 N	5 N	6 N	7 N	8 N	9 N	10 N	11 N	12 N	13 N	14 N	
Dept. of Health	242	15	11	10	7	3	7	4	2	..	..	2	2	..	..	63
Dept. of Educa.	174	10	14	21	7	5	1	2	..	..	..	..	..	..	..	60
P. H. N. Assn.	201	..	3	6	3	7	3	3	3	1	2	1	..	1	1	34
A. R. C.	50	5	5	2	2	..	..	..	1	..	..	..	..	1	..	16
T. B. Assn.	24	13	4	1	..	..	..	..	..	..	..	..	..	..	..	18
Other Local Org.	59	17	5	4	..	1	1	..	..	1	..	..	..	..	..	29
State	6	4	1	..	..	..	..	..	..	..	..	..	..	..	..	5
Metropolitan	38	28	5	..	..	..	..	..	..	..	..	..	..	..	..	33
Total	794	92	48	44	19	16	12	9	6	2	2	3	2	2	1	258

In the next table further data are presented which deal with organizations employing nurses. The number of organizations carrying on public health nursing in the 86 cities with either full-time or part-time nurses is shown to be 276, or an average of 3.2 organizations per city. With one exception, industrial organizations employing nurses are not included in this figure, nor are hospitals.

The number of supervisors or directors as reported is low. This is owing to the fact that many of the organizations employing only a few nurses do not assign the title of supervisor or director to one of their nurses. It is also true that many of the so-called supervisors are in reality so largely concerned with administrative duties that their supervisory activities in the field are light or negligible.

The 744 full-time field nurses with their 50 supervisors or directors make a total of 794 full-time nurses in the 86 cities, or 9.2 nurses per city. The largest proportion, 30.6 per cent, is employed by the departments of health. Public health nursing associations claim 25.4 per cent, the departments of education 22.0 per cent, the American Red Cross 6.2 per cent, leaving a balance of 15.8 per cent to be accounted for by the other types of organizations as listed in the table.

NUMBER OF ORGANIZATIONS OF VARIOUS TYPES EMPLOYING NURSES, WITH NUMBER OF SUPERVISORS, FULL-TIME AND PART-TIME NURSES AND TYPE OF NURSING ENGAGED IN.

Organizations	No. Org.	No. Sup.	No. of F.T.	Nurses P.T.	No. of CD	Cities Using TB	Nurses in MIP	Sch	VD	Cities doing Bedside Nursing
Dept. of H. Nrs.	65	15	229	2	49	29	41	25	22	10
Dept. of Ed. Nrs.	61	6	168	9	0	0	1	61	0	0
PHN Assn. Nrs.	34	23	178	1	7	17	23	2	4	34
ARC N. Ser.	16	5	45	0	0	4	10	4	0	10
Local TB Assn.	24	0	24	6	0	23	0	0	0	0
Other Loc. Org.	30	1	58	2	1	4	27	2	3	7
State Nurses	13	0	6	10	0	7	1	0	12	0
Met. Life Ins. Co.	33	0	38	..	..	..	..	..	..	38
Total	276	50	744	30	—	—	—	—	—	—

TYPES OF NURSING

The section of the above table which deals with the number of cities doing the five major branches of public health nursing—communicable disease, tuberculosis, maternity, infant and pre-school, school and venereal disease—needs additional explanation.

Such wide differences exist in the cities as to what is meant by the various types of nursing engaged in by the department of health and the public health nursing associations that one has no assurance that the same answers always mean the same practice. Hence a considerable latitude of interpretation must be given to the facts recorded about the nursing service of these organizations. This uncertainty does not affect the data regarding the departments of education, the tuberculosis associations and the state nurses.

CARE OF THE SICK

In the case of a nursing organization which reported it was giving all types of nursing care and no evidence was produced to show that it was carrying on conferences or clinics in the several branches of public health, only the fact of its giving nursing care of the sick was recorded. This partially explains why the 34 public health nursing associations, all of which were nursing the sick, do not all appear to be doing one or more phases of public health nursing. Ten of the city health departments reported that they were caring for the sick. In three of these cities, Augusta, Jackson and Lansing, no other organization was giving this care. The Metropolitan Life Insurance Company gave additional nursing care in four of these cities—in Altoona, Kalamazoo, Pasadena and Stockton. The one nurse in both

the Johnstown and the New Castle health departments does a small amount of such nursing, though the Red Cross, with 4 and 2 nurses, respectively, does the major portion. New Castle and Winston-Salem also have special Metropolitan Life Insurance Company nurses, and an Associated Charities nurse in Winston-Salem likewise provides some nursing care.

NUMBER OF NURSING VISITS

No attempt was made in the survey to ascertain the total number of nursing visits made by all nurses in a given city. On the other hand the number of nursing visits made by nurses in behalf of maternity hygiene, infant welfare, the pre-school child and tuberculosis were sought in each city and the information will be found in the chapters of this report dealing with these subjects.

CHAPTER XV

RECREATION

The recreational life of a community plays an important part in its healthfulness. Man's instinctive desire for physical, mental and social refreshment which has resulted in all the manifold expressions of exercise, play, entertainment and relaxation has physiological and psychological justification. As yet we do not understand all the underlying scientific reasons for our recreations but as new knowledge is acquired the soundness of most of our inclinations is well established. The recent discoveries regarding the rôle of the sunshine's ultra-violet rays in stimulating calcium metabolism and thus directly preventing and curing rickets, the most common disorder of childhood, and other nutritional disorders, has given the soundest scientific justification for every measure that will increase the absorption of direct sunshine. This fact justifies, anew, as investments paying dividends in human health, parks and playgrounds, outdoor swimming pools, solaria, sun-flooded homes, and the enforcement of anti-smoke ordinances.

In one district of Los Angeles County one hundred children appeared in juvenile court in one year. A playground was established with a staff of effective directors, with the result that during the following year there were just three cases filed in the juvenile court from that district.

This brief survey but touches upon the manifold aspects of community recreation in its broadest sense. A few of the facts are given indicative of the amount of interest and expense which have gone into the material side of recreational facilities, and where possible the extent of health promoting interest consciously at work.

PLAYGROUNDS

*The importance of play in every child's life is emphasized in Chapter X, The Hygiene of the School Child, where there is an account of the provisions made by school authorities to help children

to the fullest development of their bodies through play. But responsibility of the community for its recreational life does not end with the school child. One of its first considerations, particularly in the automobile-filled cities of today, should be the reservation of sections of the city for the play life of its citizens, great and small. The 86 cities have, with a few exceptions, done creditably in this civic duty. All but 4 cities have public playgrounds in addition to the school playgrounds. Shortly after the survey was made, one of these cities voted generous funds to establish and equip playgrounds and another has introduced supervised play during the summer months on the school playgrounds.

Responsibility for the recreational activities of a city is found under a great variety of city departments, commissions, private organizations, and the like. No less than 21 different types of organizations were found directing these activities in 68 of the 86 cities.

The number of public playgrounds in the 82 cities which reported their presence varied from 1 to 19, the average being 6.2. Twenty-one cities claimed from 1 to 3 playgrounds; 29 cities from 4 to 6, 21 from 7 to 9, 8 from 10 to 12, and 3 over 12 playgrounds. Equipment for the playgrounds seemed lacking in 8 cities but in the remainder it was found in varying degrees of completeness. Eight cities had less than 30 per cent of the 11 types of equipment concerning which information was asked. Thirty-two cities had from 30 to 50 per cent of the equipment called for; another 32 cities had from 50 to 70 per cent. The 3 remaining cities had from 70 to 79 per cent. These cities were Fresno, Roanoke and Gary. The following table shows the per cent of public playgrounds (473 in 75 cities reporting) equipped with various types of apparatus:

Type of Equipment	Per cent of Playgrounds so Equipped
Sand boxes	61
Slides	67
Swings	78
Teeters	67
Traveling Rings	26
Tennis Courts	41
Skating Rinks	15
Baseball Diamonds	59
Football Fields	30
Basketball Courts	41
Golf Courses	2

The considerable proportion of playgrounds equipped with baseball diamonds, tennis courts, basketball courts and football fields is clear evidence of the fact that the playgrounds are quite as fully for the enjoyment of older children and adults as for the young school child.

Playground leaders, trained to direct and supervise the play activities of children and adults were reported in 48 cities, in 23 of which there was a leader for each playground. All but 4 of the cities had at least one leader for every 2 playgrounds.

Exceptional development of the recreational use of playgrounds has characterized certain cities. This has sometimes been fostered by a special recreation commission as in the cities of Highland Park, East Orange and Newton; in Gary, Kenosha, Pasadena, Berkeley and Winston-Salem the leadership has come from the Department of Physical Education of the public schools. Binghamton's development is due largely to the activity of a boys' club and business organizations.

On Highland Park's commission the board of education is represented and contributes half of the budget of \$43,000. This large sum represents 77 cents per capita. Twelve full-time and 9 part-time trained workers were reported to supervise the 7 school playgrounds and the unique Ford recreation field. The scope of the commission includes summer camps, week-end camps, pageants, English and citizenship classes, as well as all types of games for all ages.

Newton has a playground commission with 19 well equipped playgrounds, the part-time of a well trained and highly efficient director and full-time assistant director, 76 part-time play leaders, and 7 full-time leaders. The commission's budget amounts to \$66,000.

Kenosha stands prominently among those cities whose departments of education have promoted recreational activities to a high degree. By special referendum Kenosha voted to levy a four-tenth mills tax for recreation purposes which provides \$12,000. This is to be expended under the board of education as trustee, but it is actually administered by the department of public recreation under the able direction of an experienced playground director. By conducting institutes to train leaders between 50 and 70 paid workers and between 200 and 250 volunteer workers have been enlisted in promoting the recreational program, which is so thoroughly organized as to reach practically the whole community.

Fresno's playground and recreation commission expended \$62,000

in one year on 12 playgrounds and 5 community centers, and employed 20 paid workers the year round.

Pasadena's school system likewise promotes an intensive recreation program through its department of physical education, with a director, assistant director, and 18 instructors. The department expends \$62,550 for school children's recreation instruction and practice, and in addition, \$10,000 in community recreation. Incidentally, it might be pointed out that about three-fourths of the school recreation budget is expended on the high and junior high schools which represent perhaps a little more than 20 per cent of the school population. It also has a playground community service which maintains with municipal funds 10 playgrounds with 30 paid workers.

PUBLIC PARKS AND AMUSEMENT PARKS

The presence of public parks or squares proves that cities have recognized the universal human desire for open space, green grass and trees and flowers in the city's midst. Only 1 city of the 86 fails to provide any kind of park or square, and even this congested industrial city, surrounded on all sides by a larger city with exceptional recreational facilities, is not altogether deprived of opportunities for outdoor recreation.

The inquiries regarding the presence of parks and squares were confined to the number containing less than 5 acres, containing between 5 and 15 acres and containing 16 or more acres, in each city. The results are tabulated as follows:

NUMBER OF CITIES WITH PUBLIC PARKS OR SQUARES OF GIVEN SIZE

Size of Parks	No Parks	1-5 Parks	No. of Cities		16 Parks	Informa- tion Lacking
			6-10 Parks	11-15 Parks		
5 Acres or less	17	38	21	4	4	2
6-15 Acres	36	46	3	..	..	1
16 or more Acres	20	58	6	..	..	2
Any Size	1	38	20	13	12	2

The average number of public parks and squares in these cities was 8.2. While 3 cities had only 1 park of the smallest size, 1 city had 8 parks of over 16 acres and 2 cities had 7 large parks. The largest number of parks and squares recorded was in Newton, where 33 were reported, Pueblo following with 31.

PRIVATE AMUSEMENT PARKS AND PICNIC GROUNDS

The prevalence of commercialized amusement parks was ascertained in the survey. Twenty-one cities each reported 1 such park, 13 reported 2, and 1 claimed 3. The question as to the number of so-called picnic grounds was also asked and 31 cities reported one or more. Twenty-four amusement parks of the roller coaster type were recorded.

TOURIST CAMPS

With the growth of automobile travel tourist camps have sprung up on the outskirts of many cities. In response to the query as to provisions for this type of visitor one-half of the cities answered in the affirmative.

The sanitary equipment and maintenance of camps where individuals assemble from different parts of the country, and eat and live in close proximity, becomes a matter of importance. In the 43 cities maintaining camps there are provided

	No. of Cities
Sanitary toilet	35
Sanitary receptacles for garbage	40
Sanitary receptacles for rubbish	39
City water	37
Sanitary inspections	39

SWIMMING POOLS

It is a commentary on typical American city life that ample bathing facilities are taken for granted, swimming pools being considered no less essential. The inquiries on this subject revealed only 13 cities to be without one or more swimming pools. Of the 73 cities reporting some manner of swimming facilities 42 cities had indoor pools only, 6 outdoor only, and 25 had both indoor and outdoor pools. The indoor pools were chiefly restricted to members of clubs, associations or schools. For example, the Y. M. C. A. maintained pools in 50 cities, the Y. W. C. A. in 28, and high and secondary public schools in 29 cities. Such pools with restricted use were found to be the only type in 44 cities, although in 22 additional cities both private and public pools existed. In only 7 cities were the pools exclusively of the public type.

HEALTH SURVEY OF 86 CITIES

No. of Pools	No. of Cities	Total No. of Pools
0	13	0
1	21	21
2	22	44
3	10	30
4	14	56
5	5	25
6	0	0
7	1	7
	<hr/> 86	<hr/> 183

Sixty-three of the 183 pools reported were other than Y. W. C. A., Y. M. C. A. and public school pools.

In addition to these swimming pools a number of cities reported the presence of bathing facilities on beaches, natural lakes or rivers. Eighteen of the 50 cities for which information was gathered had such facilities. All but one of these 18 cities had pools in addition to their bathing beaches.

CLUBS

The participation of young people's clubs in the movement to promote studies of health has grown to great proportions. While the expression of this interest is perhaps more highly developed in the larger cities with their larger and wealthier organizations, brief inquiry into this question revealed that much was being accomplished in this direction in the smaller cities. Only 9 cities lack Y. M. C. A.s, 15 lack Y. W. C. A.s, 19 Camp Fire Girls and none lack Boy Scouts. Definite health programs were found in 25 Y. M. C. A.s, 29 Y. W. C. A.s, 17 Camp Fire Girls and 30 Boy Scouts organizations. A goodly portion of these maintain special health classes while the operation of a camp is a particularly common form of activity, engaged in by about 3 out of 5 organizations. The contribution which these organizations make to individual health and to the inculcation of health habits and a health point of view must be considerable.

PUBLIC ENTERTAINMENTS

The provision for public entertainment in the 86 cities was also a subject of consideration in this survey. By ascertaining the number of theatres, motion picture houses, dance halls and public auditoria, some idea of the community's demand for public entertainment was gained. The following table presents these data:

NUMBER OF CITIES WITH

No. of Each Type	Theatres	Motion Picture Houses	Dance Halls	Public Auditoria
0	13	0	17	30
1	50	0	11	24
2	17	1	17	12
3	4	4	10	9
4	1	4	6	3
5	1	15	2	2
6-10	0	49	15	1
11-15	0	11	4	0
16-20	0	2	1	0
Unknown	0	0	3	5
Average	1.3	7.6	3.5	1.4

The cities are best supplied with motion picture houses and least so with public auditoria. The average number of motion picture houses is 7.6, of dance halls 3.5, of legitimate theaters 1.3 and of public auditoria 1.4. However, it should be noted that 17 cities have no dance halls, 13 no theaters and 30 no public auditoria.

Supervision over these forms of entertainment is not uniformly practised. Forty-one of the 86 cities censor the motion pictures or permit only those which have been censored. Fifty-three cities having dance hall supervisors have placed them under the police department, with one exception where it is a responsibility of the Community Service.

The extent to which communities availed themselves of lecture courses, series of concerts, operas and the like was inquired into and 58 cities reported that such opportunities were offered.

In making a careful selection for a permanent abiding place, forward-looking industrial plants and forward-looking citizens are considering not only the commercial advantages of a city but its livableness. Two large factors enter into the livableness of a city—health protection and recreational facilities. For Americans are gradually becoming more sane in their pursuit of health, wealth and happiness and the younger generation will see to it that the day's program includes its just share of leisure time.

In his annual report of the year's work of the Playground and Recreation Association of America, Mr. Joseph Lee, President of the Association makes the following statement: "The cities have been built up as they grew without adequate consideration of any but the

commercial housing and sanitary needs. Today they are paying the price in street accidents, delinquency, poor health and other socially costly ways."

Is your city prepared to offer the best there is? Consider your city with the following points in mind:

FUNDAMENTALS IN COMMUNITY RECREATION. PREPARED BY THE PLAYGROUND AND RECREATION ASSOCIATION OF AMERICA

1. That in nearly every community with a population of 8,000 or more there is need of a man or a woman who shall give full time to thinking, planning and working for the best possible use of the leisure hours of men, women and children.

2. That community leisure time programs should continue throughout the entire twelve months of the year.

3. That it is the responsibility of the entire community to maintain recreation opportunity for all the citizens and that there ought, therefore, to be, as early as possible, support of the recreation program through public taxation under some department of the local government.

4. There should be in every state a home rule bill which will permit the people of any city or town to make provision under local government for the administration of their community recreation.

5. That there is need in every community, even though the municipal recreation administrative body be most effective, for private organization of citizens in their neighborhoods to make the fullest use of the facilities provided, to make sure that what is being done is meeting the deeper needs of the people of the neighborhood.

6. That the emphasis ought to be not only on maintaining certain activities on playgrounds and in recreation centers but also and definitely on the training of the entire people in leisure time activities, so that within the home, in the church and throughout all natural, human relationships there shall be the best opportunity for wholesome good times.

7. That the purpose in training children and young people in the right use of leisure ought not to be merely to fill up the idle hours but also to create an active, energetic, happy citizenship.

8. That even though the beginning of a city or town recreation program be children's playgrounds, other features ought to be added progressively from year to year until music, dramatic activities and discussion of public questions, training for more intellectual uses of

spare time, and other valuable activities have been included, so that all ages and all kinds of people may find vital interest.

9. That every boy and every girl in America ought to be trained to know well a certain limited number of games for use outdoors and indoors, so that there will never be occasion for any boy or any girl to say that he cannot think of anything to do.

10. That most boys and girls should be taught a few simple songs, so that, if they wish, they may sing as they work or play.

11. That all employed boys and girls should have opportunity in their free hours to enjoy companionship and wholesome social life.

12. That through the community recreation program every boy and girl should come to appreciate the beautiful in life.

13. That adults, through music, drama, games, athletics, social activities, community and special-day celebrations, should find in their common interests the opportunity for a common community service.

14. That every new school built ought to have a certain minimum amount of space around it provided for the play of the children.

15. That nearly every new school building ought to have an auditorium preferably on the ground floor and should be so constructed that it is suited for community uses.

16. That if a suitable meeting place for community groups is not available in the schools or elsewhere, a community building should be provided through community effort.

17. That each child, under ten years of age, living in a city or town should be given an opportunity to play upon a public playground without going more than one-quarter mile from home.

18. That every community should provide space in sufficient area for the boys of the community to play baseball and football.

19. That every community should provide opportunity for the boys and girls to swim in summer, and as far as possible, to skate and coast in winter.

20. That every boy and every girl ought to have opportunity, either on his own home grounds or on land provided by the municipality, to have a small garden where he may watch the growth of plants, springing up from seeds which he has planted.

21. That in new real estate developments, not less than one-tenth of the space should be set aside to be used for play just as part of the land is set aside for streets.

CHAPTER XVI

THE PRIVATE AGENCY IN THE FIELD OF PUBLIC HEALTH

The private agency plays an important part in the health work of these communities. If it were possible to determine quantitatively the amount of hours of service given solely to health work by the personnel of the departments of health, of other official agencies and of private agencies in these 86 cities, the preponderance of hours would undoubtedly be attributed to the private agencies. Or again, if the money expended by the organizations in a community in preventive health work were calculated it is our opinion that the private agencies would be found on the whole to be carrying the brunt of the burden. However, owing to the complexity of the task, such computations have never been attempted for any considerable number of cities.

EXTENT OF SERVICE

The existence of private organizations in various fields of public health is the method employed in this report to determine the predominance of service. For this purpose only 10 major public health activities were considered and participation was defined to mean medical, nursing, inspectional, laboratory or otherwise strictly professional health work of an organized character. The number of cities in which private agencies performed these definite health services singly or in addition to the services of other organizations is graphically shown in Chart 42. It varies from no cities in vital statistics and sanitation to 53 cities in the case of tuberculosis, 52 in the case of infant hygiene, 46 cities for pre-school child hygiene and 44 for pre-natal hygiene, 11 cities for venereal disease control, 8 cities for the hygiene of the school child, 3 cities for communicable disease control and 1 city for laboratory. In other words, out of 10 activities

in 86 cities, or a total of 860 activities, private agencies were found to be contributing substantially to 218 or one-fourth. In such activities as tuberculosis, maternity and infant hygiene, over half of the cities find private agencies to be at work.

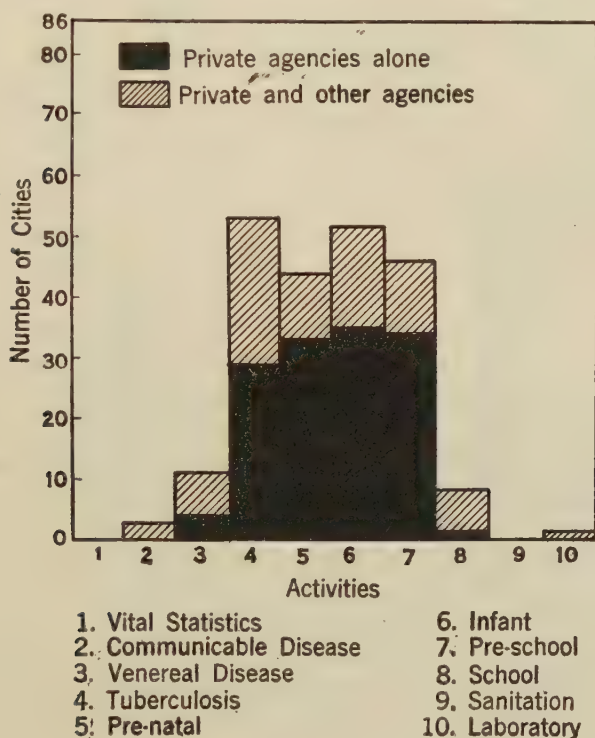


CHART 42

Health Work Conducted by Private Agencies

On the other hand, private agencies conduct exclusively 16 per cent of the health work, as defined, in these cities. In 4 activities, namely, tuberculosis, maternity, infant and pre-school hygiene, private agencies alone are conducting all the work in more than a third of the cities.

The table which follows summarizes in greater detail the facts described above and illustrated in Chart 42.

NUMBER OF CITIES IN WHICH PRIVATE AGENCIES PARTICIPATE IN THE
DIRECTION OF MAJOR HEALTH ACTIVITIES

Type of Activity	Alone or with Others	Alone	With DH	With DE	With Other Official	With DH and Oth.	With DH and DE
Vital Statistics	0	..	..	..	..	..	..
Communicable Dis.	3	..	3	..	..	..	..
Venereal Disease	11	4	4	..	3	..	..
Tuberculosis	53	29	18	..	4	2	..
Pre-natal	44	33	6	..	4	1	..
Infant	52	35	11	..	5	1	..
Pre-school	46	34	7	..	4	1	..
School	8	1	1	5	..	..	1
Sanitation	0	..	..	..	..	..	..
Laboratory	1	..	..	..	1	..	..
Total number	218	136	50	5	21	5	1
Per Cent	25	16					

The participation of the health department, the department of education and the other official agencies, has been discussed in Section I of this report. It may, however, be repeated here that the department of health alone is conducting only 46 per cent of the health work in these cities, although another 11 per cent of the work is done by both the health departments and some other agency. The departments of education, limiting themselves to school hygiene, conduct this work in 55 cities, representing 6 per cent of all the health work, while other official agencies conduct 12 per cent of the work. Seven activities failed to be undertaken in from 2 to 20 of the cities. In 3 activities this lack was of considerable dimensions; 20 cities being without a venereal disease service, 19 without a maternity service, and 17 without a pre-school service.

There are, to be sure, a large number of private organizations interested in one way or another in the health of the community and its inhabitants, which are not considered in the figures mentioned above. The descriptive narrative summary written by each surveyor at the termination of his survey of a city always mentions and often gives detailed accounts of these organizations, which in individual cities vary in number from 3 or 4 to 25 or 35. They touch all aspects of community life and contribute in varying degrees to the health, social, educational, recreational and moral aspects of life. No attempt will be made here to evaluate them except in the most general way.

The nursing associations in the 86 cities have already been enumerated and described in the chapter on Public Health Nursing. Of the 276 organizations employing nurses, 137, or one-half, were private organizations. They employed 48 per cent of the nurses.

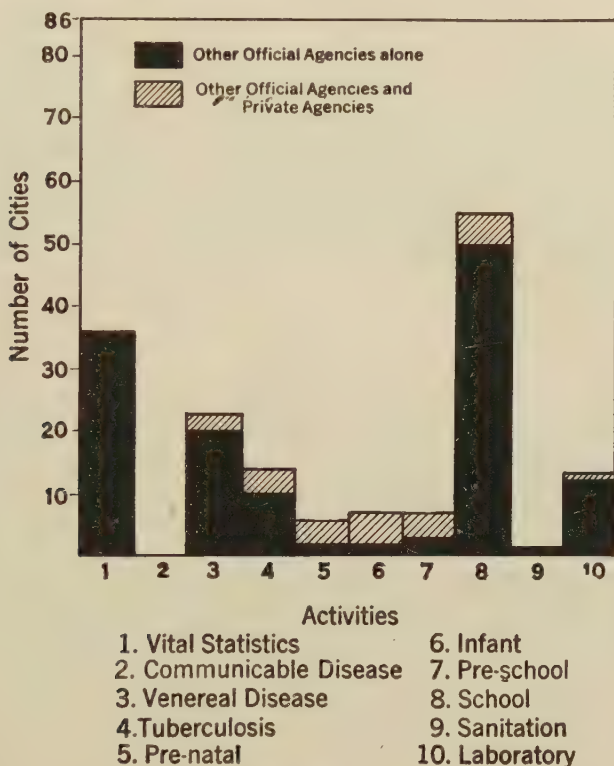


CHART 43

Health Work Conducted by Other Official Agencies

Boys' and girls' clubs and denominational associations were found in from 80 per cent to 90 per cent of the cities and definite health programs and camps were reported in 3 out of 5 organizations.

Recreation associations or commissions are particularly common, with their definite health promoting programs and resources. Public playgrounds are reported in all but 4 cities.

ORGANIZED ADULT INTEREST IN CHILD HEALTH

Adult interest in health, if awakened to any extent, is apt to take expression in definite activities of existing local organizations. This

is true of men's clubs as well as of women's clubs, and of national as well as local organizations. The schedule inquired whether the local women's clubs were engaged in health activities of any kind and 53 cities replied in the affirmative. Forty-two cities reported organizations which endeavor to interest women in the questions of child health and 30 in the questions of general community health. Some indication of the variety of these interests and activities may be suggested by the following: financial support of fresh air and tuberculosis camps; milk distribution in schools; playgrounds; child welfare clinics; obstetrical beds; school health programs; school equipment; stimulation of diphtheria immunization; conduct of child study classes; correction of physical defects of school children; provision of assistance for the nursing work.

PARENT-TEACHERS ASSOCIATION

An organization developed primarily to promote the welfare of the school child through closer relationships and better understanding between parents and teachers is the Parent-Teachers Association. This association was found in some or all of the schools in 73 cities. A few of the ways in which it aids child health are indicated by the table below. Milk is furnished in some or all of the schools in 37 cities; the equipment of playgrounds is aided in 26 cities; school lunches are furnished in 24 cities; scales have been purchased in 21 cities; and clinical services are supplied in 11 cities. The development of intelligent interest and sound knowledge on the part of this association regarding the subject of child welfare should certainly be the concern of health leaders.

Type	Number of Cities		
	Yes	No	Information Unobtainable or Lacking
Women's Clubs engaged in health activities	53	27	6
Organizations attempting to interest women			
in health of children	42	33	11
in health of the community	30	39	17
Organized Parent-Teachers Associations	73	13	0
Aid by purchase of scales	21	50	2
Aid by furnishing school lunches	24	47	2
Aid by furnishing milk	37	35	1
Aid by furnishing playgrounds	26	45	2
Aid by furnishing clinical service	11	60	2
Aid otherwise	14	38	21
Men's Clubs interested in public health	67	13	6

PRIVATE AGENCY IN THE FIELD OF HEALTH 267

The preceding table presents some of the facts revealed in the survey as to how organized adult interest in child health has taken hold of local clubs and associations.

LUNCHEON CLUBS

In recent years the national luncheon clubs of leading citizens, such as the Kiwanis, Rotary, Lions, and others, have responded most generously to the appeal of the crippled child in need of orthopedic treatment by a specialist; the backward or under-privileged child requiring special consideration; and the child threatened with tuberculosis. Such hitherto often neglected or unrecognized problems are rapidly coming to be very real concerns of these groups of active business men.

OTHER LOCAL AGENCIES

Local organizations which were attempting to interest women in the health of children were found in 42 cities. In Chapter IX, on The Hygiene of the Pre-school Child, reference has been made to the 61 cities with day nurseries, most of which were private organizations directed by groups of women and supported in some manner by the community. Similarly, orphanages and children's homes, many of which are conducted by private organizations, are an example of agencies which to some extent engage in definite health promotion in addition to their primary relief functions.

RELATIONSHIP BETWEEN PRIVATE AND PUBLIC AGENCIES IN THE FIELD OF HEALTH

Essentially there is no fundamental difference between good public health work carried on by private effort and that of official agencies. The need is so vital and the field so broad that both public and private effort will find ample opportunity for service for decades to come, each contributing services which are invaluable to humanity. Their relation, one with the other, should be one of cordial cooperation through a coordination of effort in every line of associated endeavor.

Numerous examples of this whole-hearted and effective cooperation between public and private agencies are brought out by the survey. Notable instances were found in Berkeley, Binghamton, East

Orange, Rockford, San José and York. In Berkeley the relation is three cornered, involving the city, the private agency and the state university. This relationship, though more complicated, is also, at its best, more effective because of its teaching possibilities.

That private agencies have been largely responsible for the initial efforts which later resulted in a broad and well-considered community program is likewise apparent. It is natural that this should be so. If public funds were freely appropriated for experimental work in the field of public health, many schemes and plans would be forced upon the citizenry which expert and conscientious judgment would condemn. A few of the larger cities which are confronted from time to time with individual problems have definitely established public health research services under the official agency. Their function has been largely that of proving or disproving the advisability of applying new methods and procedure of development to the particular city. They are set up as an expert advisory service to the health officer.

Private agencies, then, may be looked upon as being intrusted with the function of developing new fields of public health service, keeping in mind the ultimate desirability of having these services taken over by the public officer as soon as their worth has been established. This process of transfer is constantly going on in many phases of health work. Clinics of all kinds, nursing and even hospital services, which have been started by private agencies have been generally accepted as a public responsibility and are continually being turned over to the official agency to operate while the private effort is free to pursue more advanced lines.

Section III

SKETCHES OF THE HEALTH WORK IN EACH CITY

THE 86 CITIES WITH NAMES OF SURVEYORS AND DATE OF VISIT IN 1924

W. F. WALKER, Dr. P.H.

Chattanooga, Tenn....	Nov. 20-24, 1923
Bethlehem, Pa.....	Feb. 4-9, 1924
Chester, Pa.....	Feb. 11-16
§§ Lancaster, Pa.....	Feb. 18-23
York, Pa.....	Feb. 25-29
Altoona, Pa.....	Mar. 3-7
Johnstown, Pa.....	Mar. 17-21
McKeesport, Pa.....	Mar. 22-24
New Castle, Pa.....	Mar. 24-29
Binghamton, N. Y....	Apr. 1-5
Passaic, N. J.....	Apr. 8-12
Mount Vernon, N. Y..	Apr. 14-19
West Hoboken, N. J..	Apr. 21-26
Perth Amboy, N. J....	Apr. 28-May 1
Hoboken, N. J.....	May 5-10
East Orange, N. J....	May 12-17

B. FRANKLIN ROYER, M.D., D.Sc.

§ Saginaw, Mich.....	Jan. 21-25
Little Rock, Ark....	Jan. 28-Feb. 2
Wichita Falls, Texas..	Feb. 4-9
Shreveport, La.....	Feb. 11-17
Beaumont, Texas....	Feb. 18-23
Galveston, Texas....	Feb. 25-Mar. 1
† Pasadena, Calif.....	Mar. 10-15
† Fresno, Calif.....	Mar. 17-22
† Stockton, Calif.....	Mar. 24-29
† San José, Calif.....	Mar. 31-Apr. 5
† Berkeley, Calif.....	Apr. 7-12
† Sacramento, Calif....	Apr. 14-19
Butte, Montana.....	Apr. 21-26
Pueblo, Colo.....	Apr. 28-May 3
Topeka, Kansas.....	May 5-10
Springfield, Mo.....	May 11-16
† Lincoln, Nebr.....	May 17-21
† Cedar Rapids, Ia....	May 26-31
† Davenport, Ia.....	June 2-8

EDWARD STUART, B.S.

Wheeling, W. Va....	Feb. 25-29
Huntington, W. Va...	Mar. 3-8
Roanoke, Va.....	Mar. 9-15
Augusta, Ga.....	Mar. 24-29
Macon, Ga.....	Mar. 31-Apr. 5
Montgomery, Ala.....	Apr. 7-13
Mobile, Ala.....	Apr. 14-19
Tampa, Florida.....	Apr. 21-28
Charleston, S. C.....	Apr. 28-May 3

- * Assisted by Annetta J. Nicoll, M.S.
- † Assisted by Elnora E. Thomson, R.N.
- ‡ Assisted by Jessie Ross Royer, R.N.

Winston-Salem, N.C..	May 5-10
Portsmouth, Va.....	May 12-17
Charlotte, N. C.....	May 16-22
Elmira, N. Y.....	May 24-31
Niagara Falls, N. Y..	June 2-7
Lakewood, Ohio.....	June 9-14

S. J. CRUMBINE, M.D.

Atlantic City, N. J...	June 3-9
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MURRAY P. HORWOOD, Ph.D.

§ Quincy, Mass.....	Mar. 10-15
Chelsea, Mass.	Mar. 17-22
Everett, Mass.....	Mar. 24-29
Newton, Mass.....	Mar. 30-Apr. 5
Malden, Mass.	Apr. 9-14
Brockton, Mass.....	Apr. 14-19
Salem, Mass.....	Apr. 21-26
Fitchburg, Mass.....	Apr. 28-May 3
New Britain, Conn...	May 5-10
Portland, Maine....	May 12-17
Pawtucket, R. I.....	May 19-24
Woonsocket, R. I....	May 26-31
Haverhill, Mass.....	June 1-7
* Pittsfield, Mass.....	June 9-11
* Holyoke, Mass.....	June 12-14

HAROLD H. MITCHELL, M.D., C.P.H.

§ Lima, Ohio.....	Jan. 28-Feb. 2
|| Springfield, Ohio....	Feb. 4-9
Covington, Kentucky..	Feb. 11-16
Lexington, Kentucky..	Feb. 18-23
Muncie, Indiana.....	Feb. 28-Mar. 3
Terre Haute, Ind....	Mar. 10-15
Jackson, Mich.....	Mar. 20-26
Lansing, Mich.....	Mar. 28-Apr. 2
	and Apr. 14-15
Kalamazoo, Mich....	Apr. 7-12
Gary, Indiana.....	Apr. 21-26
Rockford, Ill.....	May 2-7
|| Kenosha, Wis.....	May 12-17
|| Springfield, Ill.....	May 19-24
|| East St. Louis, Ill...	May 26-29
|| Racine, Wis.....	May 29-June 1
|| Cicero, Ill.....	June 1-5
|| Decatur, Ill.....	June 5-10

PHILIP S. PLATT, C.P.H.

§ Bay City, Mich.....	Jan. 21-26
Hamtramck, Mich....	Jan. 28-30
Highland Park, Mich..	Jan. 31-Feb. 2

- || Assisted by T. B. Shank, B.A.
- § Assisted by W. F. Walker, Dr. P.H.
- §§ Assisted by Edward Stuart, B.S.

INTRODUCTION

In the foregoing section there has been presented a picture of the general state of development of important items affecting the public health of a community. In these pictures the individual cities, to a large extent, lose their identity, only standing out now and then by reason of a particularly difficult problem or of a service more than usually well done. To meet the demands of those who desire to study the health work of an individual city or to learn of its problems as they appeared at the time of the survey, the following sketches have been prepared.

DESCRIPTION OF SKETCHES

In writing these sketches an introductory statement dealing with the type, size, industry, geography and history of the city in brief and general terms, has been included as an aid in helping the reader to visualize the city. The subject matter presented has been drawn from what are considered conservative and authoritative sources.

In each city following the introductory statements there are set forth in concise form what appear to be the most interesting items having to do with its public health organization and accomplishments. This material has not been forced into a predetermined and arbitrary form but has been allowed to take the shape which the individuality of the city indicated. It should be borne in mind in reading these sketches that the information upon which they are based was gathered in the spring of 1924 and all of the figures and statistics refer to the last year of record, which was 1923. Items of only moderate importance and activities whose records of accomplishment are but average have frequently been omitted from the list receiving detailed consideration.

CHANGES SINCE SURVEY

Since the survey there have undoubtedly been changes or developments in every city which may have altered the city's standing. Noteworthy among those which have shown improvement are Decatur and Chattanooga, which have secured full-time trained health officers; Tampa which has reorganized its entire Health Department; and Berkeley and Saginaw which are beginning to realize the benefits of the programs which they had just launched at the time of the survey. Information at hand concerning the cities in California, Pennsylvania, Massachusetts and Michigan, as well as Augusta, Racine, Rockford and Terre Haute, indicates that progress has been made. Changes have

no doubt occurred in other cities but the information has not come to our attention.

EDITING OF SKETCHES

The possibility of inaccurate statements of fact and mistakes in judgment has been appreciated and every practical effort has been made to avoid errors and to correct them when discovered. The description of the health work in each city has been read critically by each surveyor. In addition each sketch has been edited carefully. It was particularly desired that the descriptions should be checked by those locally responsible for the health work in each city. This proved to be impracticable because of the time involved in sending each sketch to be read by a considerable number of persons, such as the health officer, superintendent of schools, director of the nursing organization, the secretary of the tuberculosis association and others.

COMPARISONS WITH GROUP PRACTICE

The mere recounting of what is present or absent in a city may be of some value to health workers in other cities, but it is not particularly enlightening to the city in question. To derive benefit from an account of this kind a city would like to know how its activities differ from others, and how they compare. Thus there must be introduced into the description some mention as to amount or quality in contrast with group practice. This will enable a city to roughly visualize its position relative to other cities in any of the major health activities. The purpose of the survey was informative, to gather material which would serve as a picture of the health situation in cities of this size for the country at large. This is quite different from an investigation instigated by the city itself for the specific purpose of acquiring advice and recommendations as to the course it is pursuing. The present survey does not pretend to do this and consequently the comments offered in the individual city sections are purposely brief and have to do only with certain outstanding facts.

AN OBJECTIVE BASIS OF COMPARISON IN THE APPRAISAL FORM

If comparisons are to be introduced, a background or standard must be chosen. This background may be the general impressions gained by the surveyor in his limited group of cities. On this basis it is difficult to compare a city in one surveyor's group with that in another's. It is desirable to have an objective standard which would make possible the impersonal comparison of one city with another. The most advanced steps which have been taken in the developing of such a basis of comparison are represented by the Appraisal Form published by the American Public Health Association in 1924, this document having been formulated by the group judgment of active health officers in New England, Ohio and Michigan and representatives of certain national health agencies including the American Public Health Association, the

National Health Council, the American Child Health Association, the National Organization of Public Health Nursing, the American Social Hygiene Association and the National Tuberculosis Association.

The Appraisal Form represents the furthest advance toward what is hoped eventually to be a measure of health organization efficiency. In its present form it is not that. It is now more a measure of amount or extent of organized health activity. The items in the Appraisal Form are largely quantitative. The efficiency of personnel is not recognized nor the effectiveness of methods. The Appraisal Form does provide, however, a useful objective measure of the extent of community health activity, both public and private. This limitation must be kept clearly in mind.

THE ANALYSIS BY GROUPS

The Appraisal Form has been used in the analysis of this survey because it is believed to be the most helpful objective measure that exists in this field. On the basis of the separate rating of each of the major health activities in every city, the cities have been grouped in thirds, the upper third, the middle third and the lower third for each activity. The terms "upper" and "lower" have been used with design in place of the terms "best" and "worst." The objective standard does not yet permit of these latter terms. There may be cities in the middle third for a certain activity which are doing "better" work than cities in the upper third. The interpretation of this grouping is that cities in an upper third grouping are showing more activity in accordance with the standards called for in the Appraisal Form. As a reason for using the Appraisal Form at all, it may be said, however, that the city which is doing the more work is, in general, the city that is doing the better work. This statement is substantiated by the personal judgment of the surveyors, the degree to which their opinions confirm the ratings of the Appraisal Form being described in the Introductory Chapter.

EXPLANATION OF TABLE

For the purpose of comparison with other cities, then, there is included in each city sketch a table showing, for each of the eleven major health activities, whether the city in question ranks among those of the upper, middle or lower third. The rank of a city is determined by the score which it receives on the objective criteria as set up in the Appraisal Form for City Health Work. In the first two groups (upper and middle third) there are 29 cities and in the third 28, so that it is possible for a city to be first and for another city to be twenty-ninth in order of merit in any activity, and yet both may be placed in the same group. To indicate the agency responsible for the activity in the city, symbols have been adopted to stand for the following agencies. H—Health Department; E—Department of Education; O—other official agency including state; P—any private agency. Referring to the first sketch, that of Altoona, the table shows that the vital statistics

service is handled by some official agency other than the Health Department, which in this case is the state local registrar. This service is such as to place it among the lower third of cities. The service for school child health is administered by the Board of Education and is shown to rank among the first 29 cities. Its exact position in the group is not shown.

The concluding comments in the sketches have been deliberately limited to broad generalizations on the state of development of the various health activities.

ALTOONA, PENNSYLVANIA

Surveyed, March 3-7, 1924

Altoona is situated in western Pennsylvania in a narrow but fertile valley between two ranges of the Allegheny Mountains, only a few miles from the famous Horseshoe Curve. Altoona is not an old city. Its first house was built in 1850. In 1920 the population was 60,331 and in 1923 it was estimated to be 64,458. Negroes constitute 2 per cent of the population and foreign born white 9 per cent. The majority of the houses are of wood and of the one-family type.

Because Altoona is a large railroad center between hills it is a smoky city. The district surrounding Altoona is rich in coal. The principal industries are railroad construction and repair shops, silk mills, and iron rolling mills. Motor trucks and a variety of other products are also manufactured.

DEPARTMENT OF HEALTH

There is no board of health. The full-time health officer has served Altoona over twenty years. He is not a physician nor has he had special training in public health, but years of experience, good judgment and live interest in health matters have largely supplied that lack. He is a Fellow of the American Public Health Association. The local physicians give him loyal support. He is assisted by two nurses, two sanitary inspectors and one food inspector. The appropriation for the health department for 1923 was \$10,530 or about 16 cents per capita.

With the exception of a small quantity of certified milk, all the milk supply of Altoona is pasteurized. Only about 60 per cent of the pasteurizing vats, however, are equipped with recording thermometers. Dairy farm inspection is well handled, but owing to the lack of a full-time laboratory man, bacteriological examinations of the milk are made only in the summer.

There were 268 inspections of food handling establishments and 15,972 sanitary inspections made in 1923.

The two nurses in the health department divide their time between communicable disease control, infant welfare, maternity and some bedside care. The usual routine control of communicable disease is maintained. In this the nurse is assisted by a sanitary inspector. Children must be vaccinated before they can attend school. The County Medical Society and the Health Department have done some educational work regarding the value of diphtheria immunization with the result that 2,000 persons were given toxin-

antitoxin in 1923. Spot maps of communicable diseases are to be found in the Health Department.

Two well-baby clinics a week conducted by the health department had an attendance of 907 during 1923 and 1,541 home visits were made by the nurses. Very little pre-natal service exists although some advice is being given by the Altoona Hospital.

The state maintains clinics for tuberculosis and venereal diseases. There were 273 persons examined at the tuberculosis clinic during 1923 and 761 home visits were made. There are no local facilities for hospital care of tuberculosis and very few Altoona patients were cared for by state institutions in 1923. Treatments at the venereal disease clinics numbered 1,779.

Birth and death records are filed with a local state registrar who acts only as a copyist and makes no compilations.

HEALTH OF THE SCHOOL CHILD

The Department of Education employs three part-time physicians, two full-time nurses and six full-time dental hygienists, each with an unusual degree of interest in the work. All children are examined annually by the physicians. The records of defects found and efforts made to correct them are more complete than in many of the cities studied. Only about 10 per cent of the children examined were found to be free from some physical defect. All the schools are provided with scales and children are weighed once a month. Dental hygienists examine the teeth of all children in the first four grades.

There has been some interest in health teaching in the Altoona schools for a number of years. In addition to the course in hygiene there is a course in "human behavior, manners, morals, civics, patriotism and safety." The course in hygiene begins in the fourth grade. The school nurses and dental hygienists gave 492 health talks in 1923.

PRIVATE AGENCIES

One of the most active of private agencies in Altoona is the Parent-Teachers Association which, among other things, has sponsored milk lunches and dental clinics in the schools, diphtheria immunization, school gardens and playground equipment.

The Rotary Club is financing a survey of all the crippled children in the community.

There are no day nurseries, baby boarding homes or other child-caring institutions in Altoona.

Eight playgrounds under the direction of the recreation commission are equipped with apparatus and supervised during the summer. Several of them are located on school grounds.

COMPARISON WITH OTHER CITIES

Altoona's health program is fairly well under way, but undoubtedly lacks in sufficient personnel to carry it forward satisfactorily.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	O	.....	★
T. B. Control	O	.....	★
Pre-natal	P	.....	★
Infant	H	.....	★
Pre-school	H	.....	★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H★		
Pop. Health Inst.	H	.....		★

¹See page 273.

Adequate laboratory facilities are yet to be supplied, as is also a nursing staff sufficiently large to carry out the program of educational clinics so wisely begun. The interest in health shown by the department of education and the amount of money appropriated by it for the furtherance of health work compares very favorably with the average for the 86 cities.

ATLANTIC CITY, NEW JERSEY

Surveyed, June 3-9, 1924

Atlantic City is located on Absecon Island, a long narrow strip of land on the ocean front of southeast New Jersey. No other city in the group studied has the variable population of Atlantic City. The resident population in 1920 was 50,707, and in 1923 was estimated to be 52,349. But in August the average daily population is 300,000, and the average annual population for both resident and transient population is about 100,000. The resident population is composed of native born, foreign born, and negroes in about equal parts.

There are no manufacturing industries in the city. The principal business of the resident population is to take care of the thousands, who, during the summer season, tax the 1,200 hotels and rooming houses in their rush to the famous ocean beach.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and four commissioners, the Department of Health coming under the jurisdiction of the mayor. There is no board of health. The half-time health officer, appointed by the mayor, is a physician who also has charge of communicable disease control in the municipal hospital. The health appropriation for these two services was \$35,326.50 in 1923, or about 67 cents per capita. Included in the Health Department staff are four sanitary inspectors and one food inspector, two clerks and one nurse. The duties of the Health Department consist of the recording of vital statistics, control of communicable disease, inspections of sanitation, and inspection of food handling establishments, and some milk inspection work. Laboratory facilities are provided in the Atlantic City Hospital, although work is also sent to the laboratory of the State Board of Health at Trenton. Good records of communicable disease cases and deaths are maintained with spot maps showing the location of active cases.

Because of the fluctuation of population, the milk supply is variable in quantity and is at least partially supplied by neighboring towns. Supervision of dairy farms is largely carried on by the state. While pasteurization is not required by state or local law, yet it is thought that about 90 per cent of the total supply is pasteurized and as far as could be ascertained, all cattle are tuberculin tested. Laboratory analysis of the milk supply at frequent intervals is carried out by the hospital laboratory, but no records of

bacteria counts could be obtained. During 1923, Health Department inspectors made 4,500 food inspections and 5,000 sanitary inspections.

Routine quarantine of communicable disease is carried out with one nurse making instructive visits to homes. The transient nature of Atlantic City's population makes the provision for care of contagious diseases in the municipal hospital particularly desirable, and the number of cases hospitalized is unusually large. Children must be vaccinated before they may attend school, but no records of any vaccinations done by the Health Department could be obtained. Neither had any educational work regarding the value of diphtheria immunization been done.

The state cooperates with the city Health Department in the maintenance of the venereal disease clinic, where, in 1923, there were 3,847 treatments given.

HEALTH OF THE SCHOOL CHILD

An unusually large and cooperative school medical staff is employed by the Board of Education. There are five part-time physicians, one full-time dentist, two part-time dentists and six full-time nurses.

All children are given a careful physical examination annually. The physician in charge of the examination is assisted by nurse, teacher and physical director, and dental examinations are made by a dentist. Excellent records of examinations made and defects found could be obtained, but the surveyor was unable to obtain information concerning corrections of defects, although it is known that the nurses do considerable home visiting to urge parents to attend to corrections. In the clinic maintained by the dentists during 1923 there were 2,518 fillings, 1,977 extractions and 456 cleanings. Just prior to the survey two eye specialists were employed part-time to examine special cases referred to them by the medical inspectors.

Each child's record is entered on a card that goes with him through school. Height and weight are determined twice a year. Excellent records of this work are kept and studied in connection with the nutrition work in the schools. There are about 200 children enrolled in nutrition classes, and about 1,900 other students and teachers besides the nutrition classes are served with milk or cocoa in the schools.

Talks on hygiene are given to the teachers and the children of the several schools by the medical group two or three times a year. Classrooms and lavatories are inspected regularly by physicians or nurses to insure proper conditions of heat, ventilation, cleanliness, and seating.

There is a prescribed course in health education beginning in the third grade and health teaching is especially well correlated with the teaching of science and English.

Playground space for school buildings is smaller than in most cities because of the almost prohibitive value of land in Atlantic City. The miles

of beach playground and three well organized summer playgrounds, however, very largely compensate for this deficiency.

Examinations for working permits are also made by the school physicians. During 1923 there were 273 examinations made and permits were refused 11 children.

PRIVATE AGENCIES

Tuberculosis work is a cooperative endeavor in Atlantic City contributed to by the state, the County Tuberculosis Association and the city. The state maintains two clinics a month and the local association one clinic a month at the Municipal Hospital. The total number of persons seen at both clinics in 1923 was 591. Tuberculosis patients may be hospitalized at the county sanitarium or the city hospital.

The executive of the Tuberculosis Association is also the director of the Visiting Nurse Association. Four full-time nurses are employed, and the association does all the public health nursing of the city except the work done by the school nurses, the Child Federation nurses, and the communicable disease nurse in the Health Department. The budget for 1923 was \$7,000.

Maternal and infant welfare work is carried on through the Child Federation, a volunteer organization representing several organized women's groups, and receiving some support from the city and from Sheppard Towner Funds. The personnel of the organization consists of a full-time executive, two full-time nurses, two volunteer physicians, and two volunteer lay workers, each giving two hours a week.

During 1923 there were 1,672 visits to the infant welfare clinics and 223 to the pre-school clinics. A total of 4,064 home visits were made. There is no separate pre-natal clinic, but some home visits were made and 33 expectant mothers visited the child welfare clinics seeking information. About 50 per cent of the births were in hospitals.

PUBLIC UTILITIES

Atlantic City has an ample water supply of unusually good quality. Thirty-two artesian wells furnish almost bacteria-free water. The remainder of the supply comes from Absecon Creek. The city owns about half the watershed of this creek, including immense reservoirs. This supply is chlorinated before being mixed with the artesian water.

The sewerage system is privately owned and Atlantic City has 100 per cent sewerage connections and no outside toilets. All domestic sewage is chlorinated before being emptied into the bay. There is apparently no danger of pollution of the water on the beach front.

COMPARISON WITH OTHER CITIES

Atlantic City's reputation as a place for vacation, a spot for recreation and, it might be said, as a health resort, places a responsibility on the city

to look well to the quality of its public health service. Its lack of stable industry in winter and its crowded living conditions during the summer months serve to complicate the problem.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	★	.....
V. D. Control	H-O	.....	.....	★
T. B. Control	H-O-P	.....	.....	★
Pre-natal	P	.....	.....	★
Infant	P	.....	.....	★
Pre-school	P	.....	.....	★
School	E	.....	.....	★
Sanitation	H-O	.....	.....	★
Laboratory	O	.....★	.....	.....
Pop. Health Inst.	H	.....★	.....	.....

¹See page 273.

The standing which the city has attained is relatively high. In eight of the 11 major health activities it ranks among the upper third of cities. It should be noted however that it is the work of private agencies which contribute to this standing, the department of health having no connection with the child health program including pre-natal, infant, pre-school and school work. There is evidence of lack of correlation among the private agencies. It is a function of a department of health to get the different members on a city's health team pulling together.

A more definite control of the milk supply and an aggressive campaign to secure a larger use of toxin-antitoxin also seems desirable. A program of popular health instruction adjusted to the peculiarities of the local situation should be undertaken.

AUGUSTA, GEORGIA

Surveyed, March 24-29, 1924

Augusta lies on the bank of the Savannah River, which separates Georgia from South Carolina. The city is flat with the exception of a few hills on the outskirts and includes an area of approximately nine and a half square miles.

Founded as a trading post in 1736, the city has grown important as a distributing center, with excellent railroad and steamship facilities. Augusta is the second largest inland cotton market in the world. It is also the distributing center for the county's corn, potatoes, peas, beans, wheat, rye, hay, fruit and vegetables.

Among the principal articles manufactured are cotton goods, brick and tile, lumber, fertilizer, and cotton seed products. There are also iron and steel works, a large candy factory, the railroad shops of the Georgia Railroad, flour mills and paper mills.

In 1920 the population was 52,548, of which 43 per cent were negroes. The population of the city constituted approximately five-sixths of the population of the entire county. The estimated population of the city in 1923 was 54,264. The predominant type of dwelling is the single family frame house. The Medical College of the University of Georgia is located in the city. There is also Paine College for negroes.

DEPARTMENT OF HEALTH

The Board of Health is composed of six members who are selected from the six city wards, two physicians at large, and one chemist.

The present health officer, who has been in office for about two years, and is appointed for an indefinite term, is a physician with a degree in public health. He also holds a position as county health officer and Professor of Preventive Medicine in the University Medical School. In addition to the health officer, the Health Department personnel includes four part-time city physicians (one of whom devotes his attention to communicable disease, the remaining three to the indigent work), one part-time school physician, a registrar of vital statistics (who is also secretary of the Board), eight sanitary inspectors, three food and milk inspectors (one of whom is a veterinarian), two clerks, three temporary inspectors (or oilers for mosquito control during the summer months), and 11 nurses (five of whom are assigned to school work, the others doing generalized nursing). Unfortunately, due

to financial difficulties, it has recently been decided to cut down the public health nursing staff by eliminating the school nursing service, retaining only the six general bedside nurses. The following, like the health officer, are also on the staff of the Department of Preventive Medicine of the Medical School—one part-time supervising nurse, one part-time bacteriologist, one serologist, one part-time laboratory technician, and two part-time laboratory assistants.

The arrangements for appropriations for health work are rather involved. The city appropriates \$24,000 a year, or 45 cents per capita, directly for the Health Department. \$22,500 is appropriated by the city to the University Medical School, from which it pays the salaries of some of the Health Department employees. The Board of Education pays half of the salary of the school physician. The salaries of the health officer, the supervising nurse, and laboratory staff listed above, are paid by the Medical School from another fund. The combined appropriation made exclusively by the city for health work is approximately \$48,900 or 90 cents per capita.

The foregoing statement of the organization of the Health Department indicates the close connection existing between it and the Medical School of the State University. The health work in the community is largely conducted by these two organizations. A large number of clinics are held at the University Hospital including among others orthopedic, dental, venereal disease, pre-natal, infant and pre-school age clinics, general medical and general surgery clinics. Tuberculosis cases are treated in connection with the general medical clinics.

During 1923, there were about 6,975 treatments administered for venereal disease. Expectant mothers are treated in connection with the gynecological clinic, which is held five times a week. During 1923, 833 expectant mothers attended the clinic, and 1,179 home visits were made by the nurses to them. Approximately 27 per cent of the births occurred in hospitals. Less than 10 per cent of the births were attended by midwives.

Pediatric clinics are conducted five times a week, and well baby clinics twice a week. Both infants and children of pre-school age are observed. During 1923, only 65 tuberculosis patients were treated. There were 1,843 home visits made by the nurses of the Health Department to tuberculosis patients and contacts. There are no beds in local hospitals for tuberculosis; a few cases are sent to the state sanatorium. There is no preventorium available for undernourished or pre-tuberculous children.

The control of communicable disease is assigned to one of the part-time city physicians; few cases other than smallpox receive his attention. The number of cases and deaths reported for 1923, indicates that reporting of tuberculosis is particularly incomplete as the number of deaths recorded from this cause greatly exceed the number of cases reported. The ratio of cases to deaths reported from typhoid also indicates incomplete reporting of this disease. Children must be vaccinated before they attend school.

Diphtheria immunization is not widespread, as yet. During 1923, 350 were immunized.

A large staff of seven sanitary inspectors is maintained in the Health Department; it is felt that nuisance inspection is receiving an emphasis out of proportion to its relation to public health. Food and milk inspection is handled by three inspectors who made 11,654 inspections of food handling establishments in 1923. The control of the milk supply is hampered by the practice of selling milk directly to the consumer by small producers who are not licensed. About 80 per cent of the milk is derived from tuberculin tested cows. It is estimated that only 25 per cent is pasteurized. Excellent laboratory control is maintained by the Medical School.

The public water supply, which is derived from the Savannah River, is treated by rapid sand filtration and chlorination, and is of good quality. There are about 245 wells in use, many of which are polluted and unsafe. About 90 per cent of the dwellings are connected with the sewerage system, which is not altogether satisfactory, as one outlet allows the sewage to flow back.

HEALTH OF THE SCHOOL CHILD

The medical examination of school children is conducted by one part-time physician and five full-time nurses, one of whom is a colored nurse. There is a careful annual inspection by the nurse; the physician, assisted by medical students, examines only those children referred to him by the nurse. Follow-up work in the home is done by the nurses. The curtailment of the nursing staff recently decided upon, due to lack of funds, will decrease the efficacy of the medical supervision of school children. All of the white but none of the colored schools are equipped with scales. Children are weighed once a month, and measured twice a year. In some schools the classroom height-weight record was posted and entries were up to date.

There is an organized course in hygiene. Individual teachers are doing good work in health education but there is no general attempt to correlate health teaching with other subjects. The sanitary conditions in some of the schools, particularly the colored, are poor. Such conditions as heating by stoves, common drinking cups, double seating, and unclean toilet rooms were observed. The space provided for play in the school areas is for the most part inadequate. Five playgrounds are maintained by the city for white children and one for colored.

HEALTH ACTIVITIES OF PRIVATE AGENCIES

A recent and conspicuous activity in the city has been the Augusta Survey, which was financed by the J. B. White Foundation, and conducted under the auspices of Augusta civic organizations, assisted by the Georgia Council of Social Agencies.

The local tuberculosis association turns over the proceeds derived from

the sale of seals to the Health Department. The Parent-Teachers Associations aid the community child health program by furnishing equipment for playgrounds, dental outfits, and by fostering activity for the health of the pre-school child. Three of the mills conduct day nurseries, which have a combined capacity of 98 children, and a daily attendance of about 50.

COMPARISON WITH OTHER CITIES

Augusta ranks among the upper 29 cities in a majority of the 11 major health activities, and among the cities in the lower group in only one activity, tuberculosis control.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H-O	.....	★
V. D. Control	H-O	.....		★
T. B. Control	H-O★		
Pre-natal	H-O	.....		★
Infant	H-O	.....	★
Pre-school	H-O	.....		★
School	H-E-O	.....		★
Sanitation	H	.....	★
Laboratory	H-O	.....		★
Pop. Health Inst.	H-O-P	.....		★

¹See page 273.

The Health Department, in close cooperation with the University Medical School and the Department of Education, is engaged in a wide program, which has gained for the city a position among the upper 29 cities surveyed, on the basis of total health attainment. It is felt that a redistribution, at the discretion of the health officer, of the present expenditure for health, and a reorganization of the Health Department personnel by him would result in a more efficient basis for his work.

BAY CITY, MICHIGAN

Surveyed, January 21-26, 1924

Bay City, with a population in 1920 of 47,554 and an estimated population in 1923 of 48,415, lies on Saginaw Bay, 50 miles westward of the main body of Lake Huron. Through its center flows the Saginaw River, spanned by four iron bridges and bordered by numerous saw mills, wharves, basins, factories and one small park. The city occupies a level surface 12 square miles in area. The distance from the north end to the south end of the city is approximately 4 miles; the distance from east to west about 3 miles. The two-story frame house of wood is the most usual type of dwelling. The foreign born constitute 19 per cent of the population, the Polish being the dominant nationality among the foreign born.

Bay City is a manufacturing town of diversified interests with 128 plants, specializing in lumber, coal, fishing, cranes and beet sugar. The presence of the sugar beet fields in the surrounding country exerts a deleterious effect on the schooling of the Polish children who leave Bay City with their parents in April to work in the fields and to return only in October. Historically, Bay City grew out of a Hudson Bay Company outpost, its first school being built in 1842. With the completion of the Great Lakes-St. Lawrence Tide Water Route, Bay City's importance as a shipping post will be considerably increased.

Between 1910 and 1920, the increase in Bay City's population has been only 2,388, or 5 per cent while its neighboring rival, Saginaw, has increased its population by 15,725 or 31 per cent.

LOCAL GOVERNMENT

Largely through the Good Government League of Women Voters a reform movement in local government was started in 1920 which resulted in a complete political turnover. A new charter was adopted and the city manager-commission form of government was put into operation. At the 1922 election, however, the recently elected officials were defeated and the former officials returned to power.

NOTABLE ACCOMPLISHMENTS

Two significant progressive steps have been taken by the city of late years, in each case after ten years of agitation and two defeats at the polls. One is a modern water-works, with inlet in the bay, filtration plant (Novem-

ber 1924) and chlorination, at a cost of some \$2,600,000, to replace a highly polluted river water supply; the other is a modern high school junior college at a cost of \$2,000,000.

DEPARTMENT OF HEALTH

The Board of Health is appointed by the city commission and consists of four physicians, a new appointment being made each year for a four-year term. The mayor is a member, *ex officio*. The Department of Health includes a part-time health officer, who is also a practising physician, a clerk and a part-time city chemist. In addition to the above, there is a plumbing inspector, a food and milk inspector and a sanitary police officer, each appointed by the city manager, to whom they are directly responsible. They are paid from the payroll of the city officers. It was reported that owing to lack of work for the sanitary officer he was transferred, about two months previous to the surveyor's visit, back to the Police Department from which he had been detailed. His work was being carried on by the plumbing inspector.

The cost of this branch of the city government for 1923 was \$3,940 or 8 cents per capita. When the salaries of the three inspectors are added the sum would be \$9,720 or 19 cents per capita. It is true that the city spends additional funds for health through the medical and nursing service of the Department of Education and the nursing service of the Civic League and for further service by the city chemist. The sum thus expended by the city was \$9,900 or a grand total of \$19,620, representing 39 cents per capita.

Vital statistics are kept by the clerk of the department. There appeared to be a lack of standardization in record keeping. The inspections of food handling establishments of all types amount to an average of three a day. Sanitary inspections are more numerous, averaging seven a day. It is not known how much milk is pasteurized. Communicable disease practices follow in general the sanitary code provisions of the state. In the office adjoining the department there had been a venereal disease clinic, equipped by the State Department of Health but owing to lack of use and its failure to meet state standards it had been discontinued. The annual report of the city manager for the year 1922 describes the work of the other city departments but does not mention the work of the Department of Health, though a full report of the laboratory is given. Among the departmental suggestions is the following—"Reorganization of health clinic so that the Health Department will not only be satisfactory to the state but to the city as well."

DEPARTMENT OF EDUCATION

The school medical inspection and nursing service consists of one nurse without means of transportation, and three part-time physicians, one of whom was an eye, ear, nose and throat specialist, limiting his weekly work of about eight hours to examination of eyes, fitting of glasses, and tonsil

and adenoid operations. The other two physicians each visit eight schools about three times a year, examining the second grade children and other special cases referred by teacher or nurse, including children participating in athletics. The time devoted by the two physicians would appear to be two or three hours each a week. The examinations are admittedly very rapid. The repeated efforts of the superintendent of schools to secure an appropriation which would provide a full-time physician, a full-time dentist and three school nurses have been unsuccessful. Under the stimulation of an able director of physical education great progress has been made in the development of health and physical education.

THE VOLUNTARY AGENCIES

The most noteworthy public health work in Bay City is that carried on by the Civic League. Its nursing service, organized as long ago as 1908, consists of a supervisor and four generalized nurses, with suitable headquarters in the armory where child welfare and tuberculosis clinics and prenatal classes are held. The usual types of visiting nursing are performed though in what volume it was impossible to determine at the time of the survey owing to the ineffective record keeping system. The municipality gives its financial support and hearty approval to this work by paying the salaries of the four nurses but leaves the direction of the work to the nursing committee of the league.

RECREATIONAL ACTIVITIES OF COMMUNITY SERVICE

Bay City is also to be congratulated upon maintaining an energetic recreation program conducted by Community Service. It is financed largely by the community chest and its own activities. During the summer it maintained five playgrounds with paid play leaders. It also promotes community dances, drama, pageantry, skating and social recreation.

OTHER PRIVATE AGENCIES

Other organizations which are devoted exclusively to health work are the Anti-Tuberculosis Society, which has put scales in each public school and which finances the open air school room and its meals, and the Junior Red Cross which has a 100 per cent enrollment in the schools.

COMPARISON WITH OTHER CITIES

The relative position of Bay City in health activity as compared with the other 85 cities, is presented in the following table. It will be noted that in respect to pre-school and school hygiene and laboratory Bay City finds itself in the middle third of cities, while in the other activities it is in the lower third. In no case is its work of sufficient extent to place it among the upper third of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	O-P★		
Pre-natal	O-P★		
Infant	O-P★		
Pre-school	O-P	.....	.....★
School	E	.....	.....★
Sanitation	O★		
Laboratory	O	.....	.....★
Pop. Health Inst.	O★		

¹See page 273.

The public health work in Bay City has not been developed to the degree noted in a number of other cities in Michigan. The Department of Education is alive to its responsibilities toward the health of the school child and the constant improvement of this service may be expected. Private agencies have stepped in to fill, to some extent, the void in the official health work for the child, the tuberculous, and the vitally important field of public health nursing. Community appreciation of the necessity of a safe water supply recently found expression in the votes of the citizens. A campaign of popular education in health work if actively prosecuted would undoubtedly result in the extension of the program of the Health Department. It may be added that as a result of the questioning of the 5th grade school children, it appears that only 16 per cent had been vaccinated. This is the smallest proportion found in any of the 86 cities.

BEAUMONT, TEXAS

Surveyed, February 18-23, 1924

Beaumont is situated in the southeast corner of Texas on the Neches River, with a fresh water harbor and a channel 26 feet in depth to the gulf. The flatness of the country, and the attendant drainage difficulties, make it necessary to build many of the houses on concrete pillars, without cellars.

Thirty years ago Beaumont was a little sawmill town. The discovery of oil in 1901 started a rapid growth. After the first rush a more stable development was achieved. Excellent railroad and port facilities have contributed to commercial growth and at present, besides many oil refineries, there are lumber and rice mills, iron manufacturing and shipbuilding.

The population in 1920 was 40,422 and in 1923 it was estimated to be 46,841. About 33 per cent are negroes and 5 per cent foreign born whites.

DEPARTMENT OF HEALTH

A mayor and council of fifteen are elected by popular vote. The council elects two of its members to serve with the mayor as a commission, and this commission employs a city manager. The full-time director of the Health Department, employed by the city manager, is a sanitary engineer who has served some time with the Texas State Board of Health. He is assisted by a physician who spends part of his time in communicable disease control and in the treatment of the sick poor. He also has been appointed school physician for one of the school districts for the remainder of his time. Other members of the staff are four sanitary inspectors, two food inspectors, and a clerk. The appropriation for the health department was \$21,895 in 1923, or about 47 cents per capita.

The topography of the country is such as to create a malaria problem which the Health Department is meeting by practical methods. Large sums of money have been spent in oiling and drainage.

The director of the Health Department also does the laboratory work. Records of the amount of diagnostic work done could not be obtained. Milk samples from each supply are analyzed monthly. All cattle are said to be tuberculin tested, but there is very little pasteurized milk—probably only about 1 per cent of the entire supply. Evidently there has been little effort to increase the supply of pasteurized milk in spite of the fact that an epidemic of typhoid fever several years ago was probably milk borne. Records of the number of food or sanitary inspections could not be obtained. Very

meager communicable disease records were obtainable and in the case of tuberculosis there are seven or eight times as many deaths reported as cases. There are no spot maps of active cases in the Health Department office. Instruction in the care of communicable disease is given by the Health Department physician. Vaccination is not a requirement to attend school. So far as could be ascertained there has been no effort to interest citizens in diphtheria immunization.

There is no venereal disease service and no tuberculosis service or local means of hospitalizing tuberculosis cases.

An annual report and a monthly bulletin are published by the Health Department.

HEALTH OF THE SCHOOL CHILD

There are three separate school districts in Beaumont, two of them taking in some schools outside of the city. Each district makes provision for medical and nursing inspection and follow-up. A dental clinic is maintained by volunteer dentists in one school. Some nutrition work is being done in each school district.

Medical inspection work, in the two units containing some county schools, is carried out by the county health officer and his nurse. The district within the city employs the city physician part time, as above mentioned, and employs a full-time nurse. Each child is given a rapid examination annually. Records for the largest district showed 2,643 children with defects and 1,107 without defects in 1923. There were 210 operations for tonsils and adenoids performed, and a smaller number of other corrections.

Milk is not generally available in the schools, although some of the Parent-Teachers Associations furnish it for underweight children.

A varying amount of interest in health education is shown in different schools. One school system has a full-time health education supervisor, who works particularly through the teachers but gives occasional talks to the children. Domestic science is being heavily stressed throughout the school system.

PRIVATE AGENCIES

The Red Cross, with two full-time nurses and a third of the time of one colored nurse, maintains five conference stations for babies and pre-school children. These clinics, held once a month, have the services of volunteer physicians. During 1923, there were 177 babies and 2,106 older children in these clinics, and 2,647 home visits were made by the nurses.

No pre-natal work is being done in Beaumont and judging by the stillbirth rate there is need of it. The stillbirth rate calculated from the number of stillbirths and livebirths reported to the health department was 9.3 in 1923.

PUBLIC UTILITIES

The water supply for about 80 per cent of the town is taken from the Neches River, and treated with lime and alum, rapid sand filtration, and liquid chlorine. A portion of the town uses cistern water.

Only about 75 per cent of the dwellings have sewer connections.

COMPARISON WITH OTHER CITIES

In five of the eleven major activities Beaumont falls into the lower third of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....★	.....	.....
V. D. Control		.....★	.....	.....
T. B. Control		.....★	.....	.....
Pre-natal		.....★	.....	.....
Infant	P	.....	.....★	.....
Pre-school	P	.....	.....	.....★
School	E	.....	.....★	.....
Sanitation	H	.....★	.....	.....
Laboratory	H	.....	.....★	.....
Pop. Health Inst.	H	.....	.....	.....★

¹See page 273.

Beaumont's health program has been out-distanced by its material growth. There is no organized pre-natal, venereal disease, or tuberculosis work, nor is there any public health nursing service except in the schools. The school health work is perhaps making the most rapid strides, and a future centralization of the work of the different districts seems desirable.

BERKELEY, CALIFORNIA

Surveyed, April 7-12, 1924

Berkeley is situated along a gently rising plain 2 to 3 miles wide, on the east coast of San Francisco Bay. It extends to the base of the Berkeley Hills, and covers a total area of approximately 17 square miles. It is connected with Oakland, by several electric lines, and also with San Francisco, which lies 7 miles across the bay, by train and ferry. It is a residential suburb of these two cities, and the site of many attractive homes. The University of California is in Berkeley and its student enrollment is said to be the largest in America. There are also several theological schools, and a state institution for the deaf and dumb lies within the city limits.

The city, incorporated in 1878, is primarily a residential and educational center, with increasing industrial interests. Zoning has brought about a separation of business from the residential district. The manufacturing concerns are located, for the most part, on the lowlands along the waterfront, and their number has increased within the last 30 years from two or three to over a hundred. The chief articles of manufacture are chemicals, food-stuffs, metalware, inks, paper, textiles and woodenware.

According to the 1920 census, the population was 56,036, of which 17 per cent were foreign born. The estimated population in 1923 was 62,995.

MUNICIPAL ORGANIZATION

In July, 1923, the present manager form of city government was adopted, replacing the commissioner form. The legislative body, the members of which are elected, consists of a council of nine, one of whom is the mayor, who acts as chairman. The city executive is the city manager.

DEPARTMENT OF HEALTH

There is a close connection and marked cooperation between the Department of Health, the Health Department in the public schools, and both the staff and student body of the University of California.

The health officer is appointed by the council on recommendation of the city manager, for an indefinite term. The present officer is also director of health in the public schools, and is on the teaching staff of the University. Half of his salary is paid by the Health Department, and half by the Department of Education. He has been in office since August, 1923, and is a

physician with public health training, having had eight years experience as a state epidemiologist.

Besides the health officer, the department includes a secretary, a staff of sanitary, milk and food inspectors, and a public health nursing unit.

This nursing unit was organized and is supervised by a nurse who is assistant professor in public health nursing in the University. The staff includes one chief nurse and director of field work, seven nurse inspectors and supervisors, a coordinating secretary and statistical clerk, and 15 to 30 student nurse inspectors; the latter are graduate nurses who are students in public health nursing in the University, and devote about half-time during the course of nine months, to field work in the city without pay. In addition to furnishing field nursing for the Health Department, the nursing unit gives service for the School Department, the Health Center, a private organization which will be discussed later, the Metropolitan Life Insurance Company, and furnishes general bedside care. The budget of the unit in 1923 was \$6,600, of which amount \$4,950 was received from the Community Chest.

The Health Department is responsible for vital statistics, the control of communicable disease, food and milk control. The total expenditure of the Health Department in 1923 was \$25,208.28.

The per capita expenditure, exclusive of hospital costs was 37 cents.

The following clinics are conducted by the Health Center:—venereal disease, tuberculosis, mental, orthopedic, dental, pre-natal, infant and pre-school. The nursing unit handles the bedside nursing and directs the public nursing and instruction service provided in connection with the foregoing clinics, by utilizing the student nurses of the University of California.

The responsibility for the major health activities is distributed among the official and private agencies mentioned. The work of the various agencies is well coordinated, and good results are obtained. On the basis of achievement, Berkeley ranks among the upper 29 cities surveyed and occupies a high position within this group.

BERKELEY HEALTH CENTER

The Berkeley Health Center, a volunteer organization, working in close conjunction with the Health Department, engages in a wide range of well organized health activities. There is a routine social investigation of every new patient after the first consultation visit. His eligibility for treatment is determined by his economic status. The work of the center includes the curative and the educational. Curative clinics include pediatric, orthopedic, dental, tuberculosis, venereal, ear, nose and throat, eye, skin, and surgery, including arrangement for care in local hospitals. Educational and advisory provisions include consultation clinics, infant welfare and pre-school clinics, immunization clinics, a child guidance department with psychological

examination and habit clinic, and a child health education department, which provides a nutrition clinic, a diet clinic, and a child health class.

CHILD WELFARE

The pre-natal, infant, and pre-school child work is of such a character as to place Berkeley among the upper 29 cities surveyed in each of these activities.

Pre-natal clinics are conducted by the Health Center once a week for two hours, with a physician attending, and nursing service in the home furnished by the Public Nursing Unit. During 1923, the attendance at the clinic was 94, with 491 home visits by the nurses. It is estimated that about 10 per cent of the total births have had organized pre-natal supervision. This is small compared with some of the other cities of the same size, and is probably due in part to the fact that the cases are limited to those who are unable to pay for treatment by a physician.

Clinics for infants are conducted by the Health Center; there is a physician in attendance, and home visiting is done by the Public Health Nursing Unit, and students in the public health nursing course at the University of California. In addition, Well-Baby Conferences are conducted by the nurse inspectors of the Nursing Unit, at which a physician is present. During 1923, 1,601 infants were observed in these conferences, and 1,076 visits to the home were made by the nurses. Berkeley has succeeded in maintaining a low infant mortality rate for several years; during 1923, its rate was 41, which placed it second among the 86 cities surveyed.

Clinics for the pre-school child are conducted by the same two organizations, and are well attended. The combined attendance during 1923 was 1,207, and 538 visits were made.

The physical inspection of school children is made by the public health nursing unit which consists of seven nurse inspectors in the Health Department, assisted by the student nurses of the University. These inspections are made of each child once each semester. Dental inspection is made by a dentist and a dental hygienist. Good results are obtained in correction of defects. Follow-up work in the homes by the nurses, and the clinics maintained in the Health Center, are contributing factors. Dental clinics are also held in the schools, where all types of dental work are done with the exception of orthodontia. During 1923, 1,274 fillings and 613 extractions were made among 8,363 children enrolled.

All children are weighed and measured by the nurses twice a year, and underweight children placed under the supervision of the nurses and the home economics teachers. Milk and lunches are provided by a private organization, the Berkeley School Lunch Committee. There is an organized course in hygiene and physical education in the schools, but health education has not yet been developed to as great a degree as desirable. This will no doubt grow out of further organization. The provision of a health educa-

tion department, nutrition and diet clinics, and a health class, is an unusual feature of the Health Center.

TUBERCULOSIS

Clinics are conducted in the Health Center twice a week, with a physician attending, and follow-up of cases in the homes by the nursing unit and students in the public health nursing course. During 1923, 405 patients were observed, of which number, 235 were new, and 681 home visits were made by the nurses. In addition to furnishing instruction, the nurses provide bedside care when needed. Hospitalization is arranged for by the Health Center, patients being sent to the county sanatorium and the county hospital. During 1923, 46 patients from Berkeley were hospitalized, 16 of which were children.

A preventorium for the county was being furnished by the Alameda County Tuberculosis Association, the first unit of which was scheduled for opening in May, 1924. Eight beds out of the total 48 were to be allotted to Berkeley.

COMPARISON WITH OTHER CITIES

In 8 of the 11 major activities, Berkeley's attainment is such as to place it among the upper 29 cities; in 3 it ranks among the middle 29. Medical supervision of school children by a physician would place Berkeley among the cities in the upper third in this activity also. The Department of Education is progressive, adopting and developing modern methods in education.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H-P	.....		★
T. B. Control	H-P	.....	★
Pre-natal	H-P	.....		★
Infant	H-P	.....		★
Pre-school	H-P	.....		★
School	H-E-P	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	P	.....	★

¹See page 273.

A large part of the health work is carried on by private agencies. The University is a stimulating influence in the community, and its health work is well coordinated with all the health work of the city.

BETHLEHEM, PENNSYLVANIA

Surveyed, February 4-9, 1924

Bethlehem is located on the Lehigh River 86 miles from New York city and 57 miles from Philadelphia. It shares its western border with the somewhat larger city of Allentown. The area of the city is 18 square miles and its population according to the United States Census estimate of July 1, 1923, was 59,628, of which 22 per cent were foreign born. The population figures show a considerable increase in the last decade which is largely due to the annexation of South Bethlehem, a city lying across the Lehigh River south, and also a more recent development on a hill to the west of the original city.

The older community on the north side of the river was settled by the Moravians in 1741 where they established a mission for work among the Indians. In the center of this portion of the city there still stand in a good state of preservation and still in use many stone buildings, including the church, shop and school building, which were built about 1750. The portion of the city south of the Lehigh which was not annexed until 1917 was founded in 1847 under the name of Augusta. This town later became the site of the Bethlehem Steel Company plant and brought about a development centering around industry, thus sharply contrasting with the cultural makeup of its older neighbor.

The fact that each of the three main portions of the present city lay upon hills of considerable size has served to accentuate their individuality and it is only by the construction of the new "Hill to Hill" bridge just completed that communication between them has been made easy.

Bethlehem possesses two big interests—education and industry. It was founded as an educational center and today with Lehigh University, the Moravian Seminary and the Bach Choir it ranks high in the educational world. It is also the home of the Bethlehem Steel Company, which at the time of the survey employed 22,000 men.

DEPARTMENT OF HEALTH

The administration of the city is in the hands of a mayor and four councilmen. Each councilman superintends one or more of the city's activities. The superintendent of public safety is responsible for the activities of the fire department, the city chemist and bacteriologist, the Bureau of Health, including sanitary inspection and communicable disease control,

the collection and disposal of garbage and refuse. He also has supervision to a much less degree over the activities of the Baby Health Station and the Day Nursery, both of which are quasi-public organizations receiving the major part of their support from the Community Chest.

The Bureau of Health expenditures for 1923 amounted to \$12,867, or about 22 cents per capita.

The staff includes two sanitary inspectors for communicable disease, one nurse, one laboratory technician and assistant, one clerk and an inspector on the garbage dump. The city clerk is the secretary of the Bureau and acts as director. The city physician acts as official diagnostician and visits some cases of communicable disease at the request of the nurse.

Hospitalization of communicable disease cases is possible at Saint Luke's Hospital (208 beds), which is just outside of the city in Fountain Hill. Here 15 beds are set apart for contagious cases.

The milk supply of Bethlehem is supervised by a dairy inspector. Only 20 per cent of the supply is pasteurized at present. The laboratory control is furnished by the city laboratory and is apparently carefully and thoroughly done. The bacteria counts are reasonably low. Pasteurization has proven such an effective safeguard elsewhere that the further extension here might well be considered.

HEALTH ACTIVITIES OF STATE AND PRIVATE ORGANIZATIONS

The outstanding health activities of the community are conducted by private agencies. The Baby Health Station and the Visiting Nurse Association have a staff of six nurses one of whom is the supervisor. The entire infant and pre-school age health service, as well as the bedside nursing of the community, is carried on by these agencies. Their total budget amounts to \$6,519 for 1923, plus earnings. The operation of these services, however, is confined to the south side of the river. The tuberculosis and venereal disease service is done by the state with a personnel of two physicians and two nurses conducting two clinics a week for each service.

The supervision of school child health rests with the Board of Education, which employs one physician part-time 15 hours a week and two nurses full time.

The vital statistics of Bethlehem are collected by state registrars, three in number, each responsible for a small portion of the city. There is no joint compilation of records. This makes impossible any statement of vital data for the city as a whole. While one of the registrars has attempted some compilation for South Bethlehem as an aid to the Baby Health Station, not even annual totals were available for the other districts.

COMPARISON WITH OTHER CITIES

The table below shows the relative position of Bethlehem for each major activity in comparison with the other 85 cities. In four activities the city

is among the upper third. In a like number of activities it is among the lower third, and in three activities it lies in the middle group.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		.....★
V. D. Control	O	.....	.....★
T. B. Control	O	.....	.....★
Pre-natal	★		
Infant	P	.....		.....★
Pre-school	P	.....		.....★
School	E	.....	.....★
Sanitation	H★		
Laboratory	H	.....		.....★
Pop. Health Inst.	P★		

¹See page 273.

Examining closely those activities in which the city ranks in the upper third it is at once apparent that this position is achieved through the assistance of unofficial or private agencies. In communicable disease control the high standing is due to the efforts of a private physician working with the Woman's Club in securing the protection of a large number of children against diphtheria by toxin-antitoxin. The results in infant and pre-school child welfare are due to the Baby Health Station which receives less than 20 per cent of its income from the Bureau of Health.

The laboratory service provided by the city shows a progressive spirit in all its labors.

Because Bethlehem is made up of three somewhat disconnected areas separated by two rivers, the unification of health work is complicated.

The program of the Bureau of Health, the Bureau of Education, the state and the several private agencies are not sufficiently related. Judging by the experience of other cities of this size, it is felt that Bethlehem could consider with profit a centralization of health work, at the same time relieving the Health Department from such duties as the removal of carcasses and attention to the garbage dump.

BINGHAMTON, NEW YORK

Surveyed, April 1-5, 1924

Binghamton, with a population in 1920 of 66,800, and an estimated population in 1923 of 73,416, is the largest of a group of five adjoining communities in the Susquehanna valley at the junction of the Chenango River. This group of cities has a total population of more than 110,000. The city proper occupies an area of 8.7 square miles. More than 80 per cent of the people own their own homes, by far the great majority of the houses being single family residences, well kept and homelike. There are about 16 per cent foreign born in Binghamton and about 1 per cent negroes.

Binghamton's geographical location has aided industrial development. Important industries include the manufacture of shoes, cigars and tobacco, silks, cameras, valves, time clocks and tabulating machinery, furniture, drop forgings and automobile hardware. Standards of industrial relations between employers and employees seem unusually high in Binghamton.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and 13 councilmen, who give the impression of being a business-like, public spirited group. There is no board of health. The health officer, a physician appointed by the Commissioner of Public Safety, devotes about three-fourths of his time to the Health Department. He is assisted by three other part-time physicians who devote their time to the clinical and charities service in the city, making diagnostic calls when necessary and giving service in the tuberculosis and venereal disease clinics. Two full-time nurses devote their time to follow-up on communicable disease and venereal disease. There are also three sanitary inspectors, a registrar of vital statistics and a clerk, all full-time employees. The appropriation for the Health Department in 1923 was \$24,330, or 33 cents per capita.

Under the New York State law the physician as well as the registrar is paid for reporting births and deaths. In Binghamton physicians are also paid for reporting communicable diseases, and it is interesting to note that as far as could be ascertained all births were actually being reported and the ratio of cases of communicable diseases reported to deaths reported was unusually high. Since 1922 there has been an effort to encourage immunization against diphtheria with the result that during 1923 toxin-antitoxin was

given to 1,200 children. Vaccination against smallpox is required before children may attend school.

HEALTH OF THE SCHOOL CHILD

The Department of Education is more closely related to the city administration than is usual, and there is excellent cooperation. The medical and nursing work under the Board of Education is carried out under the director of health education by three part-time physicians and six full-time nurses, one part-time dentist, a part-time eye, ear, nose and throat specialist, two full-time oral hygienists, one full-time nutrition specialist, and six full-time physical education supervisors.

The subject of health and health education is handled in a most thorough and whole-hearted way in Binghamton. The entire teaching staff seemed unusually imbued with the idea of making healthy living a part of their own lives as well as weaving it so well into their teaching that the children unconsciously absorb the precepts. The basis for all this teaching is a syllabus on hygiene of the University of the State of New York.

Medical inspection in the schools has been carried on in a thorough manner for more than five years, and many of the corrections of defects accomplished outside of the school life are undoubtedly due to this service. About three minutes are devoted to each child in the annual routine examination, and any children showing indications of heart or lung defects are returned for a more thorough examination. Consent of the parent is always obtained for this and parents frequently attend the examinations.

An outstanding feature of the medical service in Binghamton is the work being done for crippled children. There is in the high school a special clinic room for the care of orthopedic cases and a special class room for the teaching of these children, for whom transportation is provided. In 1923, 359 cases were investigated by this orthopedic clinic. Thirty-five children were enrolled in this special class.

At the time of the survey there were no open air classes for underweights, but a building for these classes was being constructed. All children are weighed once in five weeks and underweight children once a week. Special milk lunches are provided for all children who wish them and great emphasis is placed on this in the health education program.

PRIVATE AGENCIES

The Child Welfare Association derives its funds from private sources but its direction rests almost entirely in the hands of public officials. Ten pre-natal and infant clinics a week of one hour each are conducted at five places in the city, and 139 pre-natal cases and 523 babies were registered in 1923.

The Endicott Johnson Corporation maintains three health stations in Binghamton and four adjacent communities, representing a very complete

type of industrial welfare service. At each station there is a general medical clinic and a maternity hospital. There are two eye specialists and two laboratories for the whole service. The Health Center in Binghamton has on its staff four physicians, a dentist, and nine nurses. The volume of work done during the year is very large. For instance, during 1923, physicians at this one station saw 37,036 persons at the office and made 11,958 home calls. They attended 310 confinements.

The Boy's Club and the Girl's Club are particularly active organizations, with club rooms and varied recreational and educational programs. The Boy's Club has a membership of about 1,500, and is undoubtedly a dominant factor in the school-boy life of the community.

COMPARISON WITH OTHER CITIES

The analysis given below shows that Binghamton compares favorably with the other cities in this study, achieving a place in the upper third in 9 of the 11 major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....		★
T. B. Control	H	.....	★
Pre-natal	P	.....		★
Infant	P	.....		★
Pre-school	P	.....		★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....	★
Pop. Health Inst.	H	.....		★

¹See page 273.

It would seem desirable that the child welfare work be given official recognition and financial support in the Health Department.

BROCKTON, MASSACHUSETTS

Surveyed, April 14-19, 1924

Brockton, which is located 20 miles south of Boston, was settled in 1700, became a town in 1821, and was incorporated as a city in 1881. The population in 1920 was 66,254, with about 26 per cent foreign born, and 1 per cent negroes. The estimated population in 1923 was 69,633. The predominating groups among the foreign born were Canadian, Irish, Italian, Lithuanian, Russian and Swedish.

Although Brockton is an industrial community, and the prevailing type of housing is the two-family frame dwelling, housing conditions in general seem to be satisfactory. In 1919, a zoning law was established which primarily regulates the sections of the city used for industry and commerce.

The principal industry in Brockton is the manufacture of shoes. It is estimated that there are 64 shoe factories in Brockton and many others engaged in the manufacture of shoe findings.

In general, the community has been a prosperous one, although there has been considerable unemployment at intervals during the past few years.

DEPARTMENT OF HEALTH

The Board of Health, which is appointed by the mayor and confirmed by the council, is composed of three members all of whom take an active part in the public health work of the city. Two part-time physicians act, respectively, as health officer and chairman of the board. The third member, a layman, is employed on a full-time basis and is known as the executive officer.

In addition, the Health Department staff includes a clerk and statistician and one assistant, a bacteriologist and milk inspector, who is assisted by two laboratory technicians, a dairy inspector and a clerk, three inspectors of slaughtering, a food inspector, and an inspector of plumbing and sanitation. The nursing work of the Department is done by the Visiting Nurse Association.

Responsibility for the collection and analysis of vital statistics is divided between the city clerk and the Health Department. Births and deaths are reported to the city clerk, but cases of communicable disease are reported to the Health Department. Burial permits are issued by the Health Department. Excellent records could be obtained as to the prevalence of communicable disease in Brockton during the last ten years. Cases and deaths

from scarlet fever, diphtheria, typhoid fever, diarrhea and enteritis under two years of age, and smallpox, have been rather lower than the average for the country, but cases of measles and whooping cough still occur in large numbers. The infant mortality rate has decreased from 102 in 1915 to 58 in 1923.

Vaccination is required of children before they may enter school. It was estimated that 150 persons were vaccinated during 1923 by the Health Department. Some immunization against diphtheria has been going on since 1920. In 1923, 247 persons were immunized, 197 of these being children.

The Brockton Tuberculosis Dispensary, operated by the Board of Health, is open two hours a week. In addition, a three hour state consultation clinic is conducted once a month. During 1923 the total attendance at the tuberculosis clinics was 638. Nursing service is provided by the Visiting Nurse Association and it is estimated that the equivalent of the full-time of three nurses is devoted to this service. In 1923, there were 658 visits made to homes to instruct people living in contact with tuberculosis cases. There were also 1,853 visits made for educational and bedside service to 381 patients. Forty-five tuberculosis patients were cared for at the County Tuberculosis Hospital, to the support of which Brockton contributes.

From June to October, 1923, the Health Department conducted three infant welfare clinics weekly in different parts of the city. Each clinic was attended by a physician and a nurse. The Visiting Nurse Association conducts a weekly clinic. Attendance at all clinics in 1923 was 1,285, and there were 14,529 home visits. The visiting nurses visit all babies on the birth list at least once. There is no organized work for the pre-school child.

Only about 37 per cent of the milk supply of Brockton is pasteurized, and about 20 per cent of the dairy cows are tuberculin tested. Samples are taken at frequent intervals, are analyzed bacteriologically and chemically, and follow-up field inspections are made whenever necessary. In farm inspection the federal dairy score card is used.

In 1923, there were 2,131 inspections of food handling establishments and 995 sanitary inspections. Laboratory examinations to the number of 9,759 were made in 1923. The laboratory is well equipped and well managed.

HEALTH OF THE SCHOOL CHILD

The personnel responsible for the school health work includes four part-time physicians, two full-time nurses, a half-time dentist and a full-time dental nurse. Examinations of school children are made only once during the school career of each child, when the child is in the fifth grade. In addition, children in other grades who are known to be physically defective may be selected for a special examination by the school physician. A uniform record form, recommended by the State Department of Education,

has been adopted. All children are weighed by the teachers every two months and records sent to their parents. The school dental clinic is open every forenoon for corrective work, but no educational work is done by either dentist or nurse in the school rooms. In 1923, the number of patients treated at the clinic was 1,594.

Milk lunches are available in nearly all schools and an open-air school for underweights had an enrollment of 53 in 1923.

There are two nutrition classes in the schools and a health crusade with an enrollment of 42 in one school. Other than that, there is little health education except that done by the school nurses in the course of their duties.

The physical education program has been organized on broad and wholesome lines. School playgrounds are ample in size but rather inadequately equipped with apparatus.

CHILD LABOR

It has been estimated that 28 per cent of the population between 14 and 16 years of age is gainfully employed. Some work full time and attend continuation schools.

PRIVATE AGENCIES

The Brockton Visiting Nurse Association is a flourishing and efficient organization employing 14 nurses and one substitute. As has been mentioned previously, this association does all the public health nursing of the Health Department. Nursing care is provided for almost every type of case, including maternity, obstetrical, surgical and medical, tuberculosis and contagious disease. The infant welfare work done has already been described with the work of the Health Department.

In connection with the Brockton Hospital a pre-natal clinic is maintained at which there were 109 patients in 1923. The nurses made 1,689 home visits to these cases. Pre-natal classes, not attended by a physician are also held weekly at the Visiting Nurse Association headquarters. About 45 per cent of Brockton births occur in hospitals.

The venereal disease clinic at the Brockton Hospital had an attendance of 1,131 in 1923.

The Plymouth County Tuberculosis Association, in addition to its work with the Board of Health Tuberculosis Dispensary, provides some funds for the infant welfare work of the Visiting Nurse Association, and milk for the nutrition work conducted in the schools by the Red Cross nutrition worker, who organizes nutrition classes and does some other health education work.

COMPARISON WITH OTHER CITIES

Brockton holds a position well up in the 86 cities, with eight of its eleven major activities among the upper third of cities.

HEALTH SURVEY OF 86 CITIES

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....		★
Com. Dis. Control	H-P	.....		★
V. D. Control	P	.....	★
T. B. Control	H-O-P	.....		★
Pre-natal	P	.....		★
Infant	H-P	.....		★
Pre-school	★		
School	E	.....		★
Sanitation	H★		
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

Many branches of the Health Department are well organized. It is the general experience however that the development of a balanced health program is more likely to follow where the health officer devotes full time to the work. School examinations are reserved for the children of the 5th grade. It would seem that the same amount of effort expended on children of the kindergarten or first grades would be better for all concerned. The milk work is in unusually capable hands. It is surprising, however, that not much over a third of the supply is pasteurized.

BUTTE, MONTANA

Surveyed, April 21-26, 1924

Butte derives its name from an old Indian word meaning "rounded hill-top," and owes its existence almost wholly to the minerals in these hills. The city was founded in 1864 by two placer miners. First gold, then silver, and later copper was found. The present growth of the city is almost solely due to copper mining and by-products of gold, silver, zinc and other metals secured from the ore mined primarily to get the copper. The population in 1920 was 41,611, and in 1923 the estimated population was 42,409. About 1 per cent of these are negroes and 28 per cent are foreign-born whites.

In recent years the copper smelters have been removed to Anaconda, 26 miles distant, and with the vegetation-killing sulphur removed from the air, civic pride has been awakened and the development of parks has begun. Trees and shrubs have been set out.

DEPARTMENT OF HEALTH

Butte has a board of health consisting of two lay members and the health officer, and a consulting board composed of three councilmen and the health officer. The health officer is a physician who gives something less than half his time to the Health Department and the remainder to general practice. He has been county health officer one year. He is assisted by a clerk for the vital statistics, a sanitary inspector who does most of the quarantine work, and a milk and food inspector. At the time of the survey there was an additional quarantine officer because of the unusual prevalence of smallpox and several other communicable diseases. The appropriation for health for 1923 was \$9,000, or about 22 cents per capita.

The city's registration district is not kept separate from the county district and exact figures for births and deaths are hard to obtain. Communicable disease figures are also somewhat confused. The number of cases reported each year from tuberculosis seldom equals the number of deaths. A mild epidemic of smallpox existed during the winter of 1923 and 3,000 persons were vaccinated. Routine quarantine of communicable disease is carried out and diphtheria cases are cultured but there is no instructive visiting by a nurse. There has been some publicity given to diphtheria immunization. The only laboratory work consists of tests of milk made by the milk inspector for butter fat. Bacterial counts of milk are not made. About 25

per cent of the milk supply is pasteurized but not all pasteurizers are equipped with self-recording thermometers. Neither is all the retail supply sold in bottles. It is believed that most of the cattle are tuberculin tested by the state. During 1923 there were 1,980 inspections of food handling establishments and 400 sanitary inspections. The Health Department maintains no clinics. No organization in the city maintains any of the usual educational clinics other than those for tuberculosis and infant welfare.

HEALTH OF THE SCHOOL CHILD

There is no school medical service. For some years there were four school nurses and a dentist, but this work was discontinued in 1922 because of a shortage of funds. Children are not weighed or measured. There is no milk sold in the schools and there are no open-air classes for pre-tuberculous children. There is an outlined course of health education but no direction of the work. Only a few teachers appear to be interested in health education.

OTHER AGENCIES

The State's Child Hygiene Department conducted child welfare clinics for seven weeks in Butte shortly before the survey. Considerable interest was aroused, but no plan was made for continuing the work with a local staff.

The County Tuberculosis Society maintains a clinic and a visiting nurse. There were 643 persons seen in the clinic and 1,732 home visits made during 1923. Tuberculosis patients may be taken care of in the county hospital.

The Metropolitan Life Insurance Company maintains one nurse for bedside work. None of the mining companies has an industrial health service.

Six playgrounds have recently been opened, but only one was well equipped at the time of the survey and none had supervision.

An adequate and properly controlled water supply is furnished by a privately owned company.

Only about 75 per cent of the houses in Butte are connected with the sewer system.

COMPARISON WITH OTHER CITIES

Butte stands low in the scale of health activities when compared with other cities. It does not achieve a place in the upper third of cities in a single activity and falls to the lowest third in eight of the eleven.

The addition of laboratory service, clinic service, medical and nursing work in the schools, and public health field nursing service are matters demanding the early consideration of the citizens of Butte.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P	.....		★
Pre-natal	★		
Infant	★		
Pre-school	★		
School	★		
Sanitation	H★		
Laboratory	★		
Pop. Health Inst.	H	.....		★

¹See page 273.

CEDAR RAPIDS, IOWA

Surveyed, May 26-31, 1924

Cedar Rapids is situated in a gently undulating section of east central Iowa, and is divided in two almost equal parts by the Cedar River. Beginning as a trading post in 1837, the city has developed slowly and steadily until, in 1920, it had a population of 45,566, of which 13 per cent were foreign born. The estimated population in 1923 was 50,163.

Spread over an area of about 13½ square miles, the city presents no serious housing problem. Most of the residences are of the one- and two-family type. There is a new residential development of over 1,000 acres.

There are 148 manufacturing plants representing a wide variety of products, chief of which are cereals. Railroad facilities for distribution are excellent.

DEPARTMENT OF HEALTH

The city government is in the hands of a mayor and four commissioners, who also act as a board of health. Very little change has taken place in the Health Department in the last 20 years. The personnel consists of a half-time lay health officer, who has held the position for 22 years, a full-time dairy and food inspector, a full-time sanitary inspector, a half-time laboratory technician, a half-time clerk, and a city physician, who devotes most of his time to the treatment of the indigent sick. The budget for 1923, excluding the appropriation for garbage disposal, was \$10,437.60, or 21 cents per capita.

The Department does not engage in a great variety of work. There are no clinics. Although the usual routine is followed for the control of communicable disease, there is apparently little attention given to constructive health education work in connection with it. No spot maps of communicable diseases are kept in the Health Department. There is some difficulty about proper local control of the milk supply, due to an Iowa law under which the state grants retail milk licenses and collects a fee. The state inspectors do not always agree with the local inspector as to which milk should be excluded from the city.

Vital statistics are kept in the office of the city clerk. Deaths are recorded according to the International Classification but no useful tabulation of them seems to be made and no annual report is published. As is often the case when the two offices are separated, the Health Department apparently makes very little use of the vital statistics records.

DEPARTMENT OF EDUCATION

The physical inspection of school children is done by three nurses employed by the Department of Education. There is no physician identified with this work. Good records are kept of physical defects found, and of their correction. Children are weighed and measured twice a year and a record is sent to the parents each time. In addition to the physical examinations and the necessary home follow-up work, the nurses devote a good deal of time to a health education program in the schools. They prepare lesson outlines for the grade teachers and often help in the teaching by giving class room talks. It was noticeable that the children who had received this health education course gave a very ready response to the health habit questionnaire given by the surveyors to fifth grade children.

PUBLIC HEALTH NURSING BUREAU

A supervisor and three field nurses form the staff of a private agency known as the Public Health Nursing Bureau, which does bedside nursing and conducts a series of clinics. This service includes a tuberculosis clinic, a pre-natal clinic, and an infant welfare and pre-school clinic, open four hours a week with two physicians present. Neither the Health Department nor the Nursing Bureau offers any service for venereal disease. Records for the clinics were meager and the general impression was that the work was not well organized.

OTHER PRIVATE AGENCIES

The Tuberculosis Society conducts a seal sale each year and gives the proceeds to the Public Health Nursing Bureau to support the follow-up work in connection with the tuberculosis clinic.

The Y. M. C. A. and the Y. W. C. A., each with a membership of over 500, conduct classes in health and sanitation and sex hygiene. Special attention is given to this health education work during their summer camps.

The Social Welfare League, under the direction of a trained social worker, gave aid to some 4,000 individuals in 1923, at a cost of \$12,000.

A Community House, largely supported by the Americanization Council, offers cooking and sewing classes, and a library. A public health nurse spends one hour daily at the Community House and a pre-natal and child welfare clinic is held there once a week.

COMPARISON WITH OTHER CITIES

It may be seen by the accompanying chart, showing the comparative ranking of Cedar Rapids in the 11 major activities, that in the greater number of these activities the city is grouped with the lower third of cities.

HEALTH SURVEY OF 86 CITIES

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P★		
Pre-natal	P	.....		.....★
Infant	P	.....	.....★
Pre-school	P★		
School	E	.....	.....★
Sanitation	H	.....	.....★
Laboratory	H★		
Pop. Health Inst.	P	.....	.....★

¹See page 273.

Some efforts are being made along almost all of these lines but the work is scattered among many agencies, without apparent coordination and without evidence of building toward a comprehensive, balanced city health program. It is the experience of most cities that the full-time services of a trained health officer are most helpful in achieving improvement.

CHARLESTON, SOUTH CAROLINA

Surveyed, April 28—May 3, 1924

Charleston, an important southern port, is located on a strip of land between two rivers, only a few miles from the open sea. Owing to its geographical position, its size is limited except in one direction. The city occupies a little over 5 square miles; the streets are narrow and the houses are close together.

The population in 1920 was 67,957, of which 48 per cent were negroes and 3 per cent foreign born whites. The estimated population in 1923 was 71,245.

The negro population is mixed in among the white with practically no segregated districts. The negro houses have very poor sanitary facilities and are badly over-crowded.

There is located in Charleston an important navy yard. The city is primarily a port for the shipping of tobacco, cotton, lumber and cotton textile goods. Commercial fertilizer and oil refining are two other important industries.

DEPARTMENT OF HEALTH

The Board of Health consists of seven members. There are no special qualifications for membership. The full-time health officer is appointed by the city council for a term of four years. The present health officer is a physician who has been in office for 23 years. The Health Department staff also includes one nurse, a bacteriologist and an assistant, four sanitary inspectors, four food and milk inspectors, and two clerks. The appropriation for 1923 was \$34,000 or about 48 cents per capita.

Vital Statistics are kept in the Health Department. The recorded infant mortality rate is perhaps as high as any city in the country. The incomplete reporting of births and deaths is probably one of the contributing factors to this high rate. The stillbirth rate is also remarkably high; in 1923 the proportion was 210 to 1,395 live births. Infant deaths under one year are not routinely checked against births, and in general there seems to be only a hazy understanding of the keeping and use of vital statistics.

The usual routine control of communicable disease is carried out with placarding and verbal instructions from a nurse. Reporting of communicable diseases is only fair. Vaccination is a requirement for attendance at school. There is no free immunization against smallpox, typhoid fever or

diphtheria. No spot maps or other studies of communicable diseases are kept in the office of the Health Department.

The city hospital has an efficient out-patient department with the following clinics: medical, surgical, genito-urinary, gynecological, nose and throat, dental, skin, obstetrical, and pediatric. The Charleston Visiting Nurse Association furnishes the nursing service for these clinics and the home follow-up. The four nurses on the staff are particularly active in connection with three children's clinics, a large one at the out-patient department of the city hospital, a private one at the Neighborhood House, and one at the colored Y. W. C. A. There were 3,900 children under 12 years of age observed at these clinics in 1923.

There is no tuberculosis clinic service. The city hospital, however, has beds for 28 tuberculosis patients, and during 1923 took care of nearly 100. The Tuberculosis Association is cooperating with the county in the construction of a sanatorium outside the city. No records could be obtained of the number of tuberculosis cases reported, although there were more than 100 deaths reported each year for several years previous to the survey.

A large amount of nuisance and food inspection work is done by the Health Department. During 1923 there were 84,596 visits made by sanitary inspectors, and 11,627 made by food inspectors. All of the milk supply is sold as pasteurized milk, although not all of the pasteurizers are equipped with recording thermometers. Some of the local physicians have expressed a doubt of the suitability of the local milk supply for infant feeding, even recommending prepared milks as preferable.

HEALTH OF THE SCHOOL CHILD

The school medical inspection work is administered by three part-time physicians and three full-time nurses employed by the Board of Education. Each child is examined once a year by a physician. The examination, however, does not include heart and lungs. All children are weighed and measured annually.

Little work is done in health education outside of the regular course in hygiene. A small number of children are enrolled in the Health Crusade. There are no open-air classes for underweight children but milk is provided in the schools for those who wish it.

The sanitary conditions of all schools are good; the colored schools are exceptionally good compared with those in many southern cities.

There is undoubtedly a good deal of child labor, although no accurate records could be obtained, as no physical examinations are required for working permits.

COMPARISON WITH OTHER CITIES

The accompanying table shows the relative amount of public health activity in Charleston, as compared with the other 85 cities. In five activities

Charleston is grouped with the upper third of cities, but drops to the lower third in tuberculosis control and in infant welfare.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	O-P	.....	★
T. B. Control	★		
Pre-natal	O-P	.....		★
Infant	O-P★		
Pre-school	O-P	.....		★
School	E	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....	★

¹See page 273.

Very little is being done for tuberculosis control at present, and the low ranking in infant welfare is largely because of the high infant mortality rate. At present the Health Department has no child welfare program and what work is being done is carried on by private agencies. A stricter supervision of the milk supply is needed. The most glaring fault in the health situation is the extremely high infant mortality rate. This requires intensive study as to the causes of death and a careful check of birth registration in order to determine what proportion of the high rate is real and what only apparent.

CHARLOTTE, NORTH CAROLINA

Surveyed, May 16-22, 1924

Charlotte is situated in a rolling country in the south central part of North Carolina. It is the center of the textile region of the south which has developed so rapidly in the past decade. Well equipped with railroads, Charlotte is a large distributing center as well as an industrial city. Automobiles and automobile accessories, textile mill machinery and equipment, cotton, tobacco, peanuts, lumber, flour, and rubber tires are a few of the many industries. Charlotte is also the home of the biggest hydro-electric development in the United States.

Charlotte has a college for girls and two preparatory schools for boys, besides parochial schools, business colleges, and industrial institutes for negroes.

The population in 1920 was 46,338, of which 37 per cent were negroes and 1 per cent were foreign born. The estimated population in 1923 was 50,780.

DEPARTMENT OF HEALTH

The full-time health officer, who is employed by the city and county Board of Health, has both city and county in his jurisdiction. The present health officer is a physician with experience in public health work previous to his appointment in Charlotte. He enjoys the confidence of the city administration to such an extent that he receives good financial support and a free hand in his choice of personnel.

Appropriations for city health work in 1923 were:

City Appropriation	\$35,000
Funds from various agencies.....	10,000
School Inspection	3,555
Total	<hr/> \$48,555

This amounts to about 90 cents per capita. The Department staff includes, in addition to the health officer, one physician, two food inspectors, four sanitary inspectors, a communicable disease inspector, two laboratory workers, and two clerks. In addition, there is a nursing staff, known as the Charlotte Cooperative Nursing Association, which is officially a part of the Health Department. The city supports the supervising nurse and five other nurses. The Good Fellows Club provides the salary of three nurses,

the Women's Club supports one nurse, a group of cotton mills pays part of the salary of two nurses, and the county provides two nurses. The Metropolitan Life Insurance Company also contributes to the nursing service. The work of this nursing division includes the venereal disease clinic service, tuberculosis service, school nursing, county nursing, bedside nursing, communicable disease control, pre-natal, infant and pre-school work, and industrial nursing.

The pre-natal, infant welfare and pre-school work is being carried on without any formal clinics. In the summer, however, conferences are held in the various parts of the city to which children are brought for examination by the physicians in attendance. The home visiting service, which is carried out throughout the year, is very well organized. During 1923 there were 4,297 visits made. It is the policy of the nurses during these visits to refer children needing medical care to their own physicians, or, if the family cannot afford a physician, to certain physicians who have volunteered their services for this work.

The tuberculosis and venereal disease clinics are well attended and their services are made more valuable because of good follow-up work. At present there are no local facilities for hospitalization of tuberculous patients, but plans are under way for a county sanatorium.

Only about 33 per cent of the milk supply is pasteurized. There is laboratory control, but bacteria counts are made only once in two months. All the milk is said to come from tuberculin tested cows.

Due to unsanitary conditions on the outskirts of the city and an inefficient septic tank, Charlotte has been confronted by a mosquito problem. A survey is now being made with the cooperation of the United States Public Health Service to determine the best method for eliminating the mosquito. A better means of sewage disposal is also under discussion. At present only about 75 per cent of the dwellings have sewer connections.

A large new purification plant, which was being added to the city water filtration and chlorination system at the time of the survey, will greatly increase its capacity.

HEALTH OF THE SCHOOL CHILD

Three of the nurses, two white and one colored, do all of the school inspection work. There is no medical inspector, and the number of nurses is small for the school population. The children are inspected about once in three years and those needing medical attention are referred to their own physicians or to the volunteer physicians mentioned above. There is a whole-time dental clinic with a dentist and an assistant, who together gave nearly 3,000 treatments in 1923.

Children are weighed three times a year and there is an open-air school for underweight and pre-tuberculous children.

In addition to the regular course in hygiene, some health posters and

health books are made in the schools. The nurses carry on a limited health crusade.

On account of the broad scope of the work of the Health Department, there is little need for private organizations. Two or three clubs and the Parent-Teachers Association are ready to cooperate in the health program whenever they are called upon.

The Baby Feeding Station, a self-supporting organization, provides all kinds of baby foods.

COMPARISON WITH OTHER CITIES

As will be seen by the accompanying chart, in only one of the 11 major activities, namely sanitation, does Charlotte fall into the lowest third of cities. With the improvements now being made in the water and sewerage systems, this rating will merit a change.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	H★		
T. B. Control	H★		
Pre-natal	H★		
Infant	H★		
Pre-school	H★		
School	H★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H★		

¹See page 273.

The pre-natal, infant and pre-school work would be improved by the installation of regular clinics with a physician in attendance. It is also essential to have the services of a physician for medical examination of school children. An increase in the proportion of milk pasteurized and as an increase in sewer connections are needed to raise the standing of sanitation.

CHATTANOOGA, TENNESSEE

Surveyed, November 20-24, 1923

Chattanooga is located on slightly rolling ground on a bend of the Tennessee River near the Georgia state line, in the midst of such points of historic interest as Chickamauga Park, Missionary Ridge and Signal Mountain. It is the central and largest one of a group of six communities having a total population estimated at 125,000. The population of Chattanooga in 1920 was 57,895, and in 1923 was estimated to be 65,081. About 2 per cent are foreign born and 33 per cent are negroes. The area is $6\frac{7}{8}$ square miles. Housing conditions in general are good, although crowding exists in some of the negro districts. The city is only about 75 per cent sewered.

The city enjoyed a rapid business growth during the war because of the proximity of army camps. It is noted as a railroad center and manufacturing city. Among its principal industries are the manufacture of silk and silk stockings, foundries, chemicals, furniture, machinery, agricultural supplies and equipment.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and four commissioners who also act as a board of health when necessary. The health officer, appointed by the mayor, is a physician who gives less than half time to the Health Department. He is assisted by six sanitary inspectors; one bacteriologist, three nurses, one clerk, one plumbing inspector, a part-time physician and one male attendant in the venereal disease clinic. The appropriation for the Health Department was \$30,000 in 1923, or about 46 cents per capita. The six inspectors spend a little time on administrative work and supervision of quarantine and release of communicable diseases, but most of their work is inspection of food and sanitation. Records of the total number of inspections for the year could not be obtained. About 80 per cent of the milk supply is pasteurized and it is believed that all cows are tuberculin tested. The laboratory is making frequent analyses of milk samples and there seems to be excellent cooperation from the producers.

The three nurses in the Health Department devote their entire time to the activities of the venereal disease service, which operates a clinic every evening with an attendance for the year of about 22,000. The Health Department employs a part-time physician for this clinic and the United States Public Health Service contributes the part-time of one male attendant.

The diagnostic work of the laboratory is slight, there is little attempt to secure the reporting of communicable diseases other than the most common, and no study is made of those cases reported. No spot maps of active cases were to be found in the Health Department. There were no records of cases of measles or whooping cough reported during three years preceeding the survey although there were several deaths from these causes. The number of deaths from tuberculosis is considerably greater than the number of cases reported. Reporting of births seemed to be equally incomplete.

Smallpox vaccination is a requirement to attend school and free vaccination against smallpox and typhoid fever may be obtained at the Health Department, although no records of any could be obtained. So far there has been no evidence of active interest in diphtheria immunization.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs a physician and three nurses. The plan of physical examination is one fairly complete examination on entrance into the first grade, and a more rapid one every two years thereafter. Vision is only examined upon request of the teacher. Special attention is given to examination of heart and lungs for underweight children. All children are weighed and measured three times a year and underweights once a month. Milk is available in the schools and there is one open-air class for the pre-tuberculous. About 150 children are enrolled in nutrition classes, and many of the parents of these children have been present at their physical examinations. Both nurses and teachers visit parents and urge correction of physical defects, but no records of results were obtainable. The nutrition classes are supervised by the Red Cross. Hot lunches are available in the schools and are patronized by about 16 per cent of the school population. There is as yet no organized course in health education. There is some evidence of correlation of the lunches and the work of the nutrition classes with other subjects.

OTHER AGENCIES

The tuberculosis work of the community is handled by the Chattanooga Tuberculosis Sanitarium Association. One full time nurse is employed for clinic and field work, and a 125 bed sanitarium is operated a few miles from the city. Attendance at the clinic is not large, but 235 cases, about 75 per cent of which were from Chattanooga, were cared for at the sanitorium in 1922. In spite of the fact that there were approximately 175 Chattanooga patients in the sanitorium in 1922, there was a record of only three cases reported to the Health Department as against 114 deaths.

No pre-natal work is being done. The still-birth rate for 1923, as based on the number of still-births and live-births reported to the Health Department, was 7.8. It is undoubtedly true that if births were more fully reported

this rate would be lowered, but the likelihood is that it would still remain high enough to present a health problem.

The Chattanooga Free Milk Association and the Wesleyan Good Will Center conduct some clinic and welfare work for infants and pre-school children, but the attendance is small. Through the courtesy of the Kiwanis Club they distribute some free milk.

Two well-managed day nurseries care for about 150 children daily. The only bedside nursing service is maintained by the Metropolitan Life Insurance Company, with a staff of two nurses.

Mosquito control work is under the direction of the Mosquito Control Commission. Drainage work is about three-quarters completed and oiling is being done constantly.

There are ten fairly well equipped public playgrounds, but only three of them are under the direction of play leaders.

COMPARISON WITH OTHER CITIES

Chattanooga's accomplishments in the eleven major activities are pretty evenly divided between the upper, middle and lower third of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	H	.....		.....★
T. B. Control	P	.....	.....★
Pre-natal	★		
Infant	P★		
Pre-school	P	.....		.....★
School	E	.....		.....★
Sanitation	H	.....	.....★
Laboratory	H	.....	.....★
Pop. Health Inst.	H	.....	.....★

¹See page 273.

A large amount of venereal disease work is being done. The school health program is already functioning well and gives promise of further development. No pre-natal work and very little infant welfare work is being done.

The Health Department has practically no knowledge of the vital statistics of the city, and in the communicable disease service Chattanooga is in the lower third of cities.

CHELSEA, MASSACHUSETTS

Surveyed, March 17-22, 1924

Chelsea is situated on a peninsula between the mouths of the Mystic and Charles Rivers in Massachusetts, and is connected with East Boston and Charlestown by bridges. The city was first settled in 1624, and until 1739 formed a part of Boston, when it was made a township; in 1857 it became a city. The interests are primarily industrial, with a diversity of products. The leading articles of manufacture are shoes, as well as paper boxes, steel wheels for freight cars, elastic webbing, radio apparatus and clocks. Chelsea is rather a compact city; it is 2.3 square miles in area, with 4.2 miles of water front. There is a large number of tenements. The population according to the 1920 census was 43,184, of which 40 per cent was foreign born. Of the foreign born, Russians and Poles are the predominating nationalities. The estimated population in 1923 was 47,052.

DEPARTMENT OF HEALTH

The mayor, who is elected annually, and the Board of Aldermen, constitute the administrative body. The Board of Health is appointed by the Board of Aldermen, and consists of three members, each of whom serves for 3 years; the term of one expires each year. All appointments to the Department of Health are made by the Board.

The city presents an unusual condition, in that it provides for two health officers. Technically, there is a full-time health officer, and a full-time assistant health officer. The present health officer has been in office for 13 years. The present assistant health officer, formerly employed in the Water Department, was appointed about five years ago.

In addition to the health officers, the department includes a sanitary inspector, a physician who is milk inspector and bacteriologist, four public health nurses, three of whom are school nurses, and the other a tuberculosis nurse, and a clerk. The foregoing are all full-time employees. There are also five physicians employed on a part-time basis, whose work includes communicable disease, tuberculosis, and primarily school medical inspection. One of the present appointees is also a member of the Board of Health.

The total expenditure of the department for the year 1923, including hospitalization of cases of tuberculosis and communicable disease, and scavenger service, was \$32,024.14, or 68 cents per capita.

No provision is made in the department for venereal disease control, and for maternity and child welfare work. No other agency provides any service in venereal disease.

In common with other New England cities, the city clerk is responsible for the recording of births and deaths, while the reporting of communicable disease cases is in the hands of the Department of Health. The practice of dividing the records between two divisions diminishes their value, by making them less easily accessible to the health officer.

A tuberculosis clinic is held weekly for one hour with a Department of Health physician and nurse attending. The volume of work done, as measured by the 112 patients and 845 home visits by the nurse, is not as large as that done in some other cities of the same size. Most cases are sent to the state sanatorium, for each of which the Health Department is required to pay \$4.00 per week, and a few cases to hospitals in Cambridge and Boston.

MATERNITY AND INFANT WELFARE

The Women's Public Safety Committee, a voluntary organization, provides maternity and infant care. It employs five nurses, including a supervisor, who do pre-natal and infant work in addition to general bedside nursing. The pre-natal work consists only of home visits by the nurses, and during 1923, 746 visits were made. Some of the follow-up work is done among expectant mothers attending clinics held in Boston hospitals. An infant welfare clinic is conducted, with no physician attending, and home visits are made by the nurses. In addition to following up cases reporting at the clinic, the nurses also visit cases referred by the various Boston Maternity hospitals, with whom the committee keeps in touch. During 1923, 927 visits were made. The pre-school age child is not included in the service rendered.

Chelsea ranks among the lowest third of the 86 cities in infant and pre-school work. The work of the infant welfare clinic is seriously handicapped through the lack of medical supervision. In pre-natal work, the city occupies a comparatively more favorable position, ranking among the average cities. This position would probably be materially improved with the establishment of a clinic to care for such cases, with adequate follow-up work by the nurses in the homes.

HEALTH OF THE SCHOOL CHILD

In addition to the staff provided by the Health Department for the medical supervision of school children, which consists of five part-time physicians and three nurses, dental supervision has been made possible by the Women's Public Safety Committee. This volunteer organization employs a dentist who conducts three clinics each week, each of three hours duration, in one of the schools.

The physicians devote about three hours per week to their work.

SANITATION

The only activity in which Chelsea ranks among the highest 29 cities is sanitation, which includes besides sanitation, control of milk, water and food supplies, and sewerage. Most of the milk sold in Chelsea comes from the large dealers operating in metropolitan Boston, and is therefore pasteurized. No bacteriological counts, however, are made in the laboratory, and it would seem desirable to introduce this method of control.

The water supply is derived entirely from the Boston Metropolitan supply, the quality of which is supervised by chemical analyses made by the State Department of Health once a month, and by microscopic examinations made by the Metropolitan Water Board twice a month.

The city is thoroughly sewered, the sewage discharging into the North Metropolitan Sewer, which empties into Boston Harbor.

COMPARISON WITH OTHER CITIES

Chelsea stands among the upper third of cities in one of 11 major health activities, among the middle third in six and with the lower third in four.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	H★		
Pre-natal	P★		
Infant	P★		
Pre-school	★		
School	E-P★		
Sanitation	H★		★
Laboratory	H★		
Pop. Health Inst.	O★		

¹See page 273.

A number of activities would have to be extended and reorganized to raise the comparative public health standing of Chelsea. Among other things this involves on the part of the Health Department organized interest in the health of mothers, babies and young children. It also includes the addition of medical attendance in the privately operated health clinics.

CHESTER, PENNSYLVANIA

Surveyed, February 11-16, 1924

Chester is on the Delaware River, 13 miles south of Philadelphia. Originally settled by Dutch and Swedes, it is noted historically as the first landing place of William Penn, who was attracted by the broad elevated meadows between two smaller streams which here join the Delaware. The city extends about 3 miles along the river with an average width of about 3 miles. The business district is strung along one main street for many blocks. The housing in general is satisfactory although serious crowding did occur during the war, when ship-building plants and other industries were operating to capacity. To meet this situation 2,000 houses of brick or stucco construction, two stories high, with six or eight rooms were built by government subsidy and private effort in one district.

The population in 1920 was 58,030 of which 12 per cent were negroes and 20 per cent foreign born. The estimated population in 1923 was 64,697.

The industrial activities in Chester are extremely varied, ranging from the spinning and weaving of silk and its allied industries to ship-building, steel castings, locomotives and dyewoods. Alternate periods of prosperity and depression present most serious problems for the employees and the community to meet.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and council of four members. The Health Department staff consists of a full-time registrar with the title of health officer, a physician giving part-time to laboratory service, three full-time inspectors, one for plumbing, one for building and one for sanitation, a clerk who also acts as secretary to the commissioner of health, and a part-time physician, who acts as diagnostician and carries the title of supervisor of health. The appropriation for 1923 was \$15,895, or about 24 cents per capita. Some of the municipal health appropriation goes to the support of the Child Health Center and the Day Nursery which are administered by private agencies.

There are no nurses in the Department giving any visiting instruction to communicable disease cases. Records for communicable disease deaths previous to 1923 could not be obtained. There was no evidence of any organized effort at diphtheria immunization. Vaccination is required before children can attend school.

The tuberculosis clinic and the venereal disease clinic are maintained by the state with a moderate attendance at both.

Chester and two other cities are the only cities of the 86 studied which have no organized milk inspection. Seventy-five per cent of the milk supply is called pasteurized milk, but there are no records of temperature or length of time of pasteurization and no laboratory control to determine the quality of the milk. A record of the percentage of tuberculin tested cattle could not be obtained.

HEALTH OF THE SCHOOL CHILD

The school medical work is done by a part-time physician and two nurses, employed by the Board of Education. The state law requires that each child be examined annually, and with this small staff the examination must necessarily be very brief. Children are weighed once a year, but are not measured at all and no record of their weight is sent to their parents. Milk is served in the schools for all who wish it. The records indicate that only about 10 per cent of the physical defects found, are corrected. An organized course in hygiene is given in the grade schools, but its correlation with health teaching is only incidental and dependent on the individual teacher.

PRIVATE AGENCIES

The Child Health Center conducts well-baby clinics and a home nursing service in connection with these clinics. In 1923, there were 219 children observed in the clinic and 1,826 home visits made.

The Chester Hospital also conducts pre-natal and infant clinics.

The Chester Day Nursery and Boarding Home takes both day boarders, whose mothers work, and permanent residents, more than 90 per cent falling in the latter group.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O★		
T. B. Control	O★		
Pre-natal	P★		
Infant	P★		★
Pre-school	P★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H★		

¹See page 273.

COMPARISON WITH OTHER CITIES

Chester stands in the upper third of cities in one of the 11 major health activities, and in this instance it is due to the work of the Child Health Center. It falls into the lower third group in five activities. Reorganization of the health service in Chester under trained direction, and the better co-ordination of the work is necessary to an improved standing.

Greater attention should be given to educational work in connection with communicable disease. The school medical service needs more help.

CICERO, ILLINOIS

Surveyed, June 1-5, 1924

Cicero is surrounded on three sides by the city of Chicago and is bounded on the fourth side by the town of Berwin. It is absolutely level, and has an area of $5\frac{3}{4}$ square miles at present. It once had an area of 36 square miles, but at various times since 1869 portions of it have been annexed to Chicago. The population in 1920 was 44,995, of which nearly 34 per cent were foreign born, and as many more of foreign-born parentage. The estimated population in 1923 was 55,968, while there is a working population of 70,000, many of these workmen living outside of Cicero.

Cicero is an industrial city. It not only has a large diversity of manufacturing plants, but in several lines boasts of the world's largest factories. The largest plant is the Western Electric, employing 43,000 people in the manufacture of telephones and telephone equipment. Other industries include structural steel, chimney works, chair factories, electric tools, bed springs, cable, stoves and roofing tile.

The town is governed by a president, a clerk and a board of seven trustees, three of whom are the collector, the supervisor and the assessor. The city hall is located in the residence district and is inadequate in size.

DEPARTMENT OF HEALTH

A Board of Health of five members consists of the commissioner of health, the town president, the town supervisor, the town attorney, and the captain of police. The present part-time health commissioner, who has been in office several years, is an able physician, interested in public health. His supporting staff consists of a clerk, one communicable disease nurse and four school nurses, a sanitary inspector, a quarantine officer, and six part-time physicians, four of whom work in the schools. One devotes his time to milk inspection and one to diagnosing communicable disease and aiding in school health work. The appropriation for health in 1923 was \$36,100, or about 46 cents per capita.

Communicable diseases have been well reported for the past three years. Up-to-date spot maps are kept in the Health Department and diphtheria antitoxin, toxin-antitoxin, smallpox vaccine and typhoid vaccine are available. No accurate records of their use could be obtained, however, and vaccination is not required before children may attend school.

The department does not maintain a laboratory, but uses the state laboratory and a private one in Chicago.

There is no venereal disease clinic in Cicero. For this, as well as some other clinics, Cicero makes use of the facilities at Cook County Hospital in Chicago. There is no hospital within the corporate limits of Cicero, but in spite of this, about 33 per cent of the Cicero births are in hospitals in the neighboring towns.

The water supply is obtained from the Chicago water system pumped into Cicero mains. The source is Lake Michigan.

The amount of effort expended on milk control seems inadequate. As far as could be determined by the surveyor, few farm inspections are made and the laboratory analyses, of which there were only 18 during 1923, do not include bacterial counts. Practically the entire supply is pasteurized and some certified milk is obtainable from a Chicago dealer.

A considerable portion of the work of the Health Department is school medical and nursing service. Four part-time physicians make annual routine physical inspections of all pupils. Nurses follow-up in the homes to obtain correction of defects. Nearly 5,000 corrections were obtained in 1923, the majority being dental defects. School children are sent to the dental clinic in Cook County Hospital in Chicago.

After each vacation physicians and nurses inspect all school children for contagion. Special pamphlets are issued to teachers to aid them in recognizing communicable diseases.

All children are weighed and measured annually, underweights oftener. There are no open-air classes and milk is available in only one school. Less than ten children were taking it in that school at the time of the survey.

A few talks on health are given in all classrooms above the third grade by a physician from the Health Department. Other health education work in the schools depends entirely on the initiative of individual teachers.

PRIVATE AGENCIES

The outstanding private agency of the city is the Cicero Welfare Center. It is the relief agency of the city, conducts a free employment bureau, distributes free milk, conducts infant welfare stations, and all the tuberculosis nursing and clinic work for the city.

The infant welfare service consists of three clinics a week in two different stations, two physicians and two nurses supplying the professional staff for this work. The attendance at these clinics during 1923 was 2,194. Pre-natal and pre-school work are only incidental so far.

The child welfare center also furnishes quarters for a crippled children's clinic which is conducted about once a month by an orthopedist from Springfield.

The tuberculosis work is done by a physician and two nurses. There are two clinics a month. During 1923, 230 patients were registered.

The Rotary Club has supported various child welfare projects.

COMPARISON WITH OTHER CITIES

Comparison of a city like Cicero, adjacent to all the public health advantages of a big city such as Chicago, and a municipal hospital such as Cook County Hospital, presents some difficulties. A glance at the accompanying table shows that nothing is being done actually within Cicero for venereal disease control.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P	.....		.....★
Pre-natal	★		
Infant	P	.....		.....★
Pre-school	P★		
School	H★		
Sanitation	H	.....	.....★
Laboratory	O-P	.....	.....★
Pop. Health Inst.	H-O-P	.....		.....★

¹See page 273.

A large percentage of the correction of defects of school children is made in Cook County Hospital clinics. The use of Chicago and Cook County facilities certainly seems desirable for a city the size of Cicero, provided Cicero health officials have as accurate information concerning the prevalence of disease as they would have if the clinics were held within their own city limits.

COVINGTON, KENTUCKY

Surveyed, February 11-16, 1924

Covington is situated on the Ohio River, the northern boundary of Kentucky, directly south of Cincinnati, with which city it is connected by three bridges. It is also at the mouth of the Licking River, a tributary of the Ohio, which separates it from Newport, Kentucky; three bridges connect Covington with this city. Covington is built on a plain, and extends south to Latonia, where the famous race track is located. It is partly shut in by neighboring hills on the west, and is about 6 square miles in area. The city is the trade center of an extensive district engaged in agriculture and stock-raising. It has railroad connections with the West Virginia and southern coal, iron and timber fields, and is an industrial center with a large variety of products, chief among which are iron, cigars, soap, machinery, boilers, bronze, safes, locks and cordage. The X-ray manufacturing plant, and the iron fence works located in this city are said to be the largest in the world.

Covington was settled in 1812, and chartered as a city in 1834. The population in 1920, according to census figures was 57,121, of which 5 per cent were foreign born. The estimated population in 1923 was 57,877.

DEPARTMENT OF HEALTH

The Board of Health is appointed by the commissioners, who with the mayor constitute the city administration. The board consists of seven members, including the mayor, who is chairman. Three of the other six members are physicians and three are laymen.

The part-time health officer is appointed by the Board of Health for a term of two years, which can be terminated before expiration. The present health officer is a physician who has been in office since 1921. He is keenly interested in his official duties and has been actively engaged in arousing the attention of the community to the necessity of public health measures. He is the president of the County Tuberculosis Board, which has recently begun agitation for a county tuberculosis sanatorium. A proposed County Health Unit Law, which is an enabling act, has been submitted to the legislature.

The other employees of the department, all of whom are appointed by the city commissioners, include a full-time clerk, and three full-time inspectors, one of whom is a veterinarian who also does meat and food inspection, one a sanitary inspector who also does nuisance complaint and communicable disease work, and one a building and plumbing inspector. There is also a custodian of the smallpox isolation hospital.

The Health Department appropriation for 1923 was \$13,000 of which \$500 was unexpended.

The work done by the Department is limited to vital statistics work, communicable disease control, food and milk control, plumbing, building and sanitary inspection, and some laboratory diagnostic work by the health officer.

No annual report of the activities of the Department, including the customary studies of vital statistics, is published.

Communicable disease work is one of the two major health activities in which the city ranks among the upper 29 cities. Visits are made by the sanitary inspector, and instructions left in cases of typhoid, diphtheria and scarlet fever. Diphtheria contacts are cultured, some are immunized, and cases are released on negative cultures. Children must be vaccinated before they may attend school. The health officer is available for diagnosis of doubtful cases of communicable disease. About 25 such calls were made in 1923. Free immunization against smallpox is given at the Health Department. Immunization against diphtheria is not a widespread practice.

During 1923 there were 2,019 sanitary inspections exclusive of food handling establishments. Food handling places are inspected once or twice a year by the Health Department inspector, together with the state inspector, and follow-up visits are made to see that recommendations made are complied with. Most of the attention of the Health Department veterinarian is devoted to milk inspection. Dairies selling raw milk, of which there are about four, are inspected every four or six weeks; no score card is used. Practically all milk is from tuberculin tested cows, and is delivered in sterilized bottles. About 99 per cent of the supply is pasteurized. There is no laboratory control of milk, no chemical nor bacteriological tests being made.

The publicly owned water supply is 95 per cent available; the main supply is derived from the Ohio River, and is subjected to sedimentation and chlorination. The supply was condemned recently for use on railroad coaches by the State Director of Sanitary Engineering. A typhoid epidemic last year was traced to the water supply. Water samples are sent to Lexington twice a week for bacteriological analysis.

THE SCHOOL CHILDREN'S CLINIC

The School Children's Clinic, formerly called the Penny School Clinic, is a unique factor in the health work of the city. The clinic was established in the schools for the treatment of poor children, and was financed by voluntary contributions, some of them coming from school children. The original method of raising funds has been abandoned, and through a tag day and contributions from clubs and other private agencies \$4,000 was raised last year.

Three public health nurses are now employed. One is supervisor and is

paid by the Board of Education; she is particularly competent and keenly interested in the work. She is assisted by two nurses, who work in the schools of the county, and in the clinic. The county has contributed \$500 to the clinic for this work.

Inspection of all children in the county twice annually is attempted by the nurses. There is no examination by a physician. Correction of defects is obtained through follow-up in the homes by the nurses. Only those who cannot afford to pay are referred to the clinic for treatment. A dental clinic is held for two hours each day. A medical clinic is held twice a week for one hour, and an eye, ear, nose and throat clinic one hour a week. The physicians in charge give voluntary service. School children are weighed twice a year by the nurses and teachers, but little effort is made to utilize the educational value of the classroom record. In about 75 per cent of the schools morning milk is provided under the management of the Parent-Teachers Association, with free milk provided for children unable to pay. There are no organized nutrition classes for underweight children. There is very little organized work in health education. In some of the schools there is Health Crusade work but this is largely limited to daily cleanliness inspection.

OTHER PRIVATE AGENCIES

The Kenton County Anti-Tuberculosis League was established twelve years ago; at one time three nurses were employed and for years the association carried on all the school nursing work done. At present only one nurse and a secretary are employed. The League conducts three clinics a week for one hour each, with a physician attending. Follow-up work is done in the homes by the nurse. During 1923 there were 965 visits made to the homes, but the number of patients attending the clinic has dwindled, and at the time of the survey there were about six or eight listed for home visiting. There are no local hospital beds for tuberculosis. The desirability of a county sanatorium has been recognized, and the efforts of the health officer to establish one have been mentioned.

The Kenton County Child Health Association which was started last summer conducted 15 infant welfare conferences, with the assistance of volunteer physicians, and the School Clinic nurse.

The Rotary Club has been influential in introducing a bill for the appropriation of \$75,000 for the care of crippled children in the state.

The Metropolitan Life Insurance Company employs two nurses. This is the only general bedside nursing provided in the community.

COMPARISON WITH OTHER CITIES

*Covington ranks among cities in the upper third in two of the 11 major health activities, among cities in the middle third in six of the activities, and among cities in the lower third in three.

HEALTH SURVEY OF 86 CITIES

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....		★
V. D. Control	O	.....	★
T. B. Control	P★		
Pre-natal		.....	★
Infant	★		
Pre-school		.....	★
School	E-P	.....	★
Sanitation	H-O	.....	★
Laboratory	H-O★		
Pop. Health Inst.	H-O-P	.....		★

¹See page 273.

The scope of the Health Department program is limited. Organized service for pre-natal, infant and pre-school care are not provided. Numerous private organizations have undertaken various branches of public health work not provided for by official agencies, but the work of these agencies is hampered by the difficulty of arousing public interest and gaining financial support.

DAVENPORT, IOWA

Surveyed, June 2-8, 1924

Davenport is situated on rolling bluffs on the west bank of the Mississippi River opposite Rock Island, Illinois. It was founded by Antoine LeClaire in 1836. In 1920 the population was 56,727 and in 1923 it was estimated to be 61,262. One per cent of these were negroes and 13 per cent were foreign born whites.

Streets are well laid out and fairly wide. A large part of the river front has been reclaimed and beautified. There is a mile of river wall and two parks are located between the railway and the river bank.

The Rock Island arsenal is on an island in the river. Both Davenport and Rock Island are big railroad centers. Among the products manufactured are freight cars, locomotives, agricultural implement wheels, washing machines, cereals, flour, pumps, foundry products, motion picture projectors, ready cut houses, optical goods, and type setting machines. Surrounding the city is a fertile agricultural area.

DEPARTMENT OF HEALTH

The Board of Health consists of the mayor, two alderman, a lay member and the city physician. The present part-time city physician has had several years' experience as county physician. Other members of the Health Department staff include a quarantine officer who also supervises the collection of garbage and who is known as the health officer, a food inspector, a meat inspector, an inspector of weights and measures, and a milk and dairy inspector who also does some laboratory work. Apparently all these men work independently. The appropriation for the Health Department was \$44,000 in 1923, or about 71 cents per capita. This includes such items as garbage collection, playgrounds, municipal garage, and municipal natatorium. Only \$9,700 or about 16 cents per capita is expended for the usual Health Department activities.

A local deputy of the state Health Department collects records of births and deaths and issues permits. Satisfactory records of cases and deaths of communicable diseases over a period of years could not be obtained. There were no maps or studies of disease incidence in Davenport to be found in the Health Department. Following an outbreak of smallpox in 1923 the city physician began an active campaign to encourage vaccination and vaccinated about 600 persons. Nothing has been done to spread knowledge concerning

diphtheria immunization. Diagnostic work is done by a private laboratory on contract with the Department of Health.

About 60 per cent of the milk supply is pasteurized and all raw milk is said to be from tuberculin tested cattle. Laboratory checks of the milk supply are made frequently. The average counts of both pasteurized and raw milk are high enough to indicate that there is a decided need for continued farm inspection. There were 3,084 inspections of food handling establishments and 892 sanitary inspections made in 1923.

Ninety-five per cent of the water supply of Davenport is furnished by a private corporation. The supply comes from the Mississippi River, is treated with a coagulent, sand-filtered, and chlorinated.

The venereal disease clinic, for which no figures were obtained, is maintained by the United States Public Health Service.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs a part-time physician, three full-time nurses and a full-time dentist. This staff also serves most of the parochial schools. All children are inspected by the physician once a year. Owing to the lack of scales in most of the schools, weighing is not routinely done. The nurses assist the physician in making physical examinations, take children to the dental clinic, do home follow-up, and a certain amount of health education in the class rooms. There were 2,025 children found with dental defects and 1,412 children had corrections made in the clinic during 1923.

Milk is not available in all schools, but is furnished to a few children in three schools by the Parent-Teachers Association. The only special classes are for backward children and for deaf children.

There is an outlined course of health lessons furnished to the classroom teachers and the amount of correlation of this teaching with other subjects depends on the ingenuity of individual teachers.

Working permits for minors are issued without requiring a physical examination.

PRIVATE AGENCIES

More than twenty organizations are doing welfare work or some phase of health work.

The Visiting Nurse Association employs five nurses, who do routine bedside nursing work and some instructional visiting for Davenport and two small adjacent communities. Pre-natal and baby clinics, a skin clinic, a tuberculosis clinic, a pre-school clinic, and an operative nose and throat clinic are held weekly at the nurses' headquarters. The staff is insufficient for the amount and variety of work attempted and in consequence there have been no great efforts to promote a larger attendance. There is an excellent fifty-bed hospital for the care of tuberculosis.

Friendly House is a meeting place for everyone, and offers classes in manual arts, home making, athletics, citizenship for the foreign born, and so forth. It is a wholesome community health asset. The attendance is something over 60,000 a year.

The Ladies' Industrial Relief Society manages a day nursery, a relief bureau, a free employment bureau, and a juvenile protective department. The day nursery is unusually well managed.

There is a comprehensive summer playground program supervised on four playgrounds.

COMPARISON WITH OTHER CITIES

It is fairly obvious in the preceding paragraphs that Davenport has made a beginning in health work in a good many directions, but that very little is being done towards unifying these endeavors. Few of the 86 cities have so little interrelation of work in the Health Department as Davenport has, where apparently each man runs a bureau all to himself and reports only to the mayor. A unity of purpose as well as method might be achieved through the direction of a full-time trained health officer.

The same thing may be true of the many volunteer agencies, probably all of them doing good work, but apparently with little knowledge of whether or not they are duplicating the efforts of some other agency.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O★		
T. B. Control	P	.....	.....★
Pre-natal	P	.....	.....	.....★
Infant	P	.....	.....★
Pre-school	P	.....	.....★
School	E	.....	.....★
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-P★		

¹See page 273.

The accompanying table indicates that in comparison with the other cities in this survey Davenport stands among the lower third in six of 11 major health activities.

DECATUR, ILLINOIS

Surveyed, June 5-10, 1924

Decatur is situated almost in the geographical center of Illinois on Decatur Lake, an artificial lake fed by the Sangamon River from which Decatur receives its water supply. It is in the midst of a very fertile farming community. Milliken University, an institution with about 1,000 students, is located here.

The population in 1920 was 43,818, with about three per cent negro population and six per cent foreign born. The estimated population in 1923 was 48,439. Most of the houses are of the one-family type. The city has a prosperous appearance. Public improvements are being made sufficiently expansive to take care of a large increase in population. A \$2,000,000 dam and water impounding system has recently been completed, and a new sanitary district, with additional sewers and a modern sewage disposal plant sufficient for a city five times the size of Decatur, has recently been constructed.

Decatur is considered the largest corn milling city in the world. It also has immense brass works for the manufacture of gas and plumbing fixtures. There is a very large starch factory, and among other products are automobiles, corn harvesting machinery, acetylene gas generators, brick and tile, soda fountains, and cutlery.

DEPARTMENT OF HEALTH

Decatur has the commission form of government. The Health Department is under the Commissioner of Public Health and Safety, who also has charge of the Fire Department, Building, electrical and other inspection services. At the time of the survey the commissioner was the administrative director of the Health Department, but an effort was being made to find a suitably trained full-time health officer. The Health Department personnel includes two sanitary inspectors, one milk inspector, one public health nurse, and a probation officer. The appropriation for 1923 was \$15,035, or about 31 cents per capita. One sanitary inspector, who acts as health officer, attends to communicable disease placarding. The other sanitary officer makes most of the sanitary inspections and is in charge of records of communicable diseases and other department records. The city clerk records births and deaths. As nearly as could be determined by the surveyor, births are not well reported. No spot maps of communicable diseases are kept in

the Health Department, and complete records of communicable diseases for the last few years could not be obtained.

Nearly 8,000 persons, mostly school children, were vaccinated against smallpox in 1923. Nothing has been done so far in educational publicity regarding diphtheria immunization.

The public health nurse gives instruction in cases of communicable disease. Her further duties include attendance at the infant welfare clinic, which at the time of the survey was being conducted in one of the churches, and the follow-up work for this clinic. During 1923 there were 266 children under two years of age in this clinic and 873 visits made to their homes. The pre-school work done was only incidental as older children were brought with babies to the clinic. There is no organized pre-natal clinic work, but the visiting nurses make some visits to expectant mothers.

About 30 per cent of the milk supply is pasteurized. Some bacteriological work on milk is done at the laboratory in the water supply plant, but the surveyor was unable to obtain any complete records of bacterial counts either at the laboratory or from the milk inspector. No inspection of food handling places is conducted by the city, but occasional inspections are made by the state.

HEALTH OF THE SCHOOL CHILD

There are no physicians employed by the Department of Education, but two nurses make all the inspections for physical defects and communicable disease control. It is not always possible for them to inspect each child once a year. Records of defects found were quite complete, but it was not possible to obtain records of corrections. A dentist conducts clinics 15 hours a week. During 1923, there were 2,839 children examined in this clinic and 1,467 defects were found. Children are weighed and measured at the beginning of the school year by the nurses and monthly thereafter by the teachers. All schools are equipped with scales. There are no special classes for underweight children, but milk is available in about half of the schools.

Health talks and bulletins for the teachers are prepared by the nurses and a course in Health Education is being developed. Some health plays have been given and posters were made. Some progress has been made toward correlation of health education with other subjects.

PRIVATE AGENCIES

The Macon County Hospital and Tuberculosis Sanatorium is of recent construction. This institution houses the tuberculosis hospital, the venereal disease, tuberculosis, orthopedic and pediatric clinics, and it is planned to add the county home for the poor to this group of buildings, so that better medical service can be provided there. The venereal disease clinic gave 2,251 treatments during 1923. Eighty-seven tuberculosis patients were cared for in the hospital and 546 seen at the clinic during 1923. There were made

3,411 home visits to tuberculosis patients by nurses of the Visiting Nurse Association and Macon County Tuberculosis Association. This combined organization has a staff of four nurses, who do general bedside nursing, follow-up work of the tuberculosis and crippled children's clinics and health education in the schools in the county. During 1923 they made 11,874 visits.

COMPARISON WITH OTHER CITIES

Decatur falls into the lowest group of cities in six of the 11 major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	H	.....		★
T. B. Control	P	.....		★
Pre-natal	P	.....		★
Infant	H★		
Pre-school	H★		
School	E	.....	★
Sanitation	H★		
Laboratory	O★		
Pop. Health Inst.	H	.....	★

¹See page 273.

Although no physicians are employed, excellent work in the schools is being done by the school nurses.

EAST ORANGE, NEW JERSEY

Surveyed, May 12-17, 1924

East Orange is the largest of a group of New Jersey communities known as The Oranges. They are Orange, East Orange, South Orange, West Orange and Maplewood. The latter four are residential communities for Orange, the business and industrial center of the group. East Orange has an area of $4\frac{1}{2}$ square miles. In 1920 the population was 50,710. The estimated population in 1923 was 56,601. Foreign born constitute about 13 per cent and negroes about 5 per cent of the population. On the whole, the community has a high educational and economic rating. A few small industries exist on the edge of the town, but East Orange is almost wholly residential.

DEPARTMENT OF HEALTH

City government is administered by a mayor and council. The Board of Health consisting of five members, two of whom must be physicians, appoints the full-time health officer. The present health officer is a trained sanitarian. The other personnel of the Health Department consists of two part-time physicians, one assigned to communicable disease, the other to maternity and infant welfare work; one part-time dentist, three full-time nurses, four inspectors, and two clerks. The appropriation for the Health Department for 1923 was \$26,470 or about 47 cents per capita.

Vital statistics are well kept in the Health Department, but Federal census reports are somewhat misleading, due to the fact that about 50 per cent of the births and many deaths occur in Orange hospitals, outside of the city limits of East Orange. The birth rate of East Orange is considerably lower than that of the birth registration area.

Communicable diseases are well reported, the Board of Education and the Health Department working well together in control of them among school children. Free immunization clinics are conducted by the Health Department for smallpox and diphtheria. A survey in 1922 showed that 94.5 per cent of the school children were vaccinated. In the six months preceding the survey, nearly 5,000 children were immunized against diphtheria.

Other activities of the Health Department include the inspection of food handling establishments which received about 5,300 inspections in 1923; general sanitary inspections, which amount to approximately 4,000; diagnostic laboratory work; and a dental clinic which cared for 145 patients

during 1923. Cooperation with private agencies in other clinics will be discussed later.

Milk inspection work is done by the Milk Inspection Association of the Oranges, which is supported jointly. The entire milk supply is pasteurized except about 2 per cent which is certified. The inspection service seems to be most efficient and the arrangement of joint support is undoubtedly practical and economical.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs two physicians, four nurses, a part-time dentist and a part-time assistant dentist. The physicians make examinations in every other grade beginning with the first. The nurses inspect the alternate grades, referring children with defects to the physicians. Fairly complete records are kept of defects found and corrections obtained. The responsibility for follow-up of physical defects rests with the nurses, but frequently assistance is given by the teachers. A special course of lectures has been given to the teachers to give them an appreciation of the importance of child health and to train them in observing their pupils. Children are weighed about once a month. Milk is available in the schools. The state course in health education is used in all the grades, supplemented by other work under the chief nurse who plans nutrition work for the schools, considering each school as a separate problem.

The school physicians also give examinations for working permits.

OTHER AGENCIES

Under the auspices of the Anti-tuberculosis League of the Oranges one nurse is employed who gives her full-time to the clinic and follow-up in tuberculosis for this group of cities. An open-air school, or day camp, is also conducted by this organization and it is attended by a few East Orange children.

The infant welfare work in East Orange is done partly by the Visiting Nurse Association in one ward, and the Board of Health which conducts the baby clinics and infant welfare service in the rest of the city. The Visiting Nurse Association carries on the bedside nursing service and the Maternity Center the pre-natal service. Five pre-natal clinics per week were held during 1923. Sixty-six per cent of the births are receiving post-natal supervision. There were 488 babies under supervision and 244 children of pre-school age registered in the clinics in 1923.

The staff of the Nursing Association includes eight nurses who do bedside nursing, render first aid in emergencies, conduct infant welfare and pre-natal work and classes in home nursing. The budget for the service was \$37,000.

The venereal disease service is also a joint service conducted at the Orange Memorial Hospital. A social worker is employed to do the follow-up work.

The New Jersey Orthopedic Hospital and Dispensary gives considerable free service to crippled children.

PUBLIC UTILITIES

The East Orange water supply comes from deep wells and is of good quality. Frequent laboratory checks are made.

All houses are connected with the sewerage system.

Mosquito control is carried on by the Essex County Mosquito Control Commission. Drainage has been fairly well completed but oiling continues.

COMPARISON WITH OTHER CITIES

East Orange is a member of the upper group of cities in nine of the 11 major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H★		
T. B. Control	P	.....	★
Pre-natal	H-P	.....		★
Infant	H-P	.....		★
Pre-school	H-P	.....		★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

The city impresses the surveyor as having a type of population above the average in civic consciousness, and as having a group of officials who take a progressive interest in its present and future health program. By reason of its close affiliation with the adjoining cities it has had an opportunity to work out an unusual system of cooperation and there is every evidence that the city is getting most efficient service for the money expended.

EAST ST. LOUIS, ILLINOIS

Surveyed, May 26-29, 1924

East St. Louis, Illinois, is situated on the east bank of the Mississippi River opposite St. Louis, Missouri, with which it is connected by several bridges. The city is protected from the Mississippi by a levee. Many of the streets are raised and houses are constructed at a level of eight or ten feet below the streets. Some of the buildings are raised on walls to the street level. A considerable area of the city is taken up with railroad yards. There are a few tenements. Residences are mostly of the one- and two-family type.

In 1920 the population was 66,767, with 11 per cent negroes and 10 per cent foreign born. The estimated population in 1923 was 69,729.

The principal industries include meat packing, foundry and machine shops, railroad repair shops, cotton-seed oil and electrical apparatus. The city is a large cattle and mule market. Many of the owners of these large industries live in St. Louis.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and four commissioners. The public health commissioner also has charge of public buildings, public property, electrical inspection, boiler and elevator inspection, weights and measures. This lay commissioner directs the work of the Health Department. The staff consists of a quarantine officer, two sanitary inspectors, one clerk, and a part-time physician who does some laboratory work and is available to confirm diagnoses of contagious diseases. The fumigation officer placards communicable diseases, distributes some literature and sprays with formaldehyde. The private physician is allowed considerable discretion in the management of communicable diseases, sometimes deciding that a child recovered from diphtheria may return to school without permission from the Health Department. Children need not be vaccinated to attend school and nothing has been done so far towards promoting the use of toxin-antitoxin. No spot maps of communicable diseases are kept in the Health Department office and the only records obtainable were the deaths for 1923.

Chemical analyses of the milk supply are made, but bacteriological examinations are not made. It was not possible to obtain records of the amount of laboratory work done on milk or the number of farm inspec-

tions made. Neither could the proportion of pasteurized milk be ascertained. Very little food inspection is done.

The venereal disease clinic is conducted by the county and state, the state paying the salary of the physician and the county paying the salary of the nurse. The city furnishes quarters only. The clinic is for indigents only, 4,557 treatments having been given in 1923. There is no tuberculosis clinic and no local hospital or sanatorium for the care of tuberculosis patients.

The only pre-natal work is the home visiting done by the Volunteer Nursing Association described later. Only about 9 per cent of the births in East St. Louis are in hospitals.

The appropriation for the Health Department for 1923 was \$10,000, or about 14 cents per capita.

HEALTH OF THE SCHOOL CHILD

The superintendent of schools, who is much interested in health service, was unable to obtain support for this work until 1923, when he secured from the Department of Education power to employ four part-time physicians.

Examining at the rate of about 30 an hour, these physicians examined all children once and re-examined many of them to see if defects had been corrected. Teachers assist with recording and send notices of physical defects to the parents. Records on the correction of defects were not yet obtainable. Scales were found in all schools and the teachers weigh and measure all children once a month, but so far as could be determined the use of these weight records to interest children in the practice of health habits has not been developed satisfactorily. Milk is available in about half of the schools for underweight children, but there are no special classes for undernourished children.

Health education is under the physical education director who has prepared a manual and detailed course of study which includes some instructions to the teachers in regard to health education. Some of the teachers have correlated health teaching with other subjects, but in general the work consists of talks by the teachers and the making of health posters. No play apparatus was found in any of the eight public playgrounds.

PRIVATE AGENCIES

The Visiting Nurse Association has four white nurses and three colored nurses, one of whom works in the colored district outside the city limits. The nurses work on a district basis, all of them doing some relief work because of the lack of social service work in the city. They call upon fraternal orders, church societies, and the overseer of the poor for assistance where relief is needed. One white nurse gives full time to infant welfare work. A free milk and ice fund is used for the needy by the nurses. The

infant welfare nurse made 2,284 visits to homes in 1923. There were 57 infant welfare conferences held during that year, with a total attendance of 495. There is also an infant welfare clinic once a week in charge of a local pediatrician. In 1923, there were 710 children, some of them of pre-school age, in this clinic.

The county tuberculosis association employs one nurse who does some work in the schools in the county and considerable bedside nursing.

COMPARISON WITH OTHER CITIES

The accompanying table shows that in comparison with the other 85 cities East St. Louis falls into the lowest third in eight of the 11 major activities and finds a place in the best third in only one, and that an activity financed and carried on by the state and county.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	O	.....		★
T. B. Control	P★		
Pre-natal	P	.....	★
Infant	P	.....	★
Pre-school	P★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	★		

¹See page 273.

This comparative standing is certainly an evidence of the need in East St. Louis of an awakened interest and the assumption of responsibility by the community for the development of adequate health service.

ELMIRA, NEW YORK

Surveyed, May 24-31, 1924

Elmira is situated in the south central part of New York, a few miles north of the Pennsylvania border. It lies in the valley of the Chemung River, which bisects the city, and is surrounded by beautiful hills. The city has developed from an old Indian trading post, and has the picturesqueness of an old town. The first permanent settlement was made in 1788, and the city charter was received in 1864. A fine system of parks adds to the attractiveness of the city. The Elmira College for Women was founded in 1858.

Elmira is an important railway center with large repair shops. It is served by four trunk lines, which radiate to points in all directions and make the city a good distributing center. The Pennsylvania coal fields are but 48 miles away, and connected with it by rail. The city is also important as a manufacturing center. The products are widely diversified, and include among others bridges, fire apparatus, aluminum ware, salesbooks, candy, knit goods, castings, valves and automobile parts.

The population in 1920 was 45,393, of which 10 per cent were foreign born. In July, 1923, the estimated population was 48,354.

DEPARTMENT OF HEALTH

The Board of Health, which consists of eight members including the mayor, selects the part-time health officer and appoints him for a term of four years. The present health officer is a physician in private practice, who has been in office for eight years. In addition to the health officer the Health Department personnel includes a registrar of vital statistics, two sanitary inspectors, a scavenger, an animal undertaker, a plumbing inspector, a meat and food inspector, a milk inspector, two public health nurses doing generalized work, several part-time physicians for venereal disease, maternity and infant work in the clinics, a part-time dentist, and a bacteriologist, who is a woman physician in charge of a private laboratory. The health officer's secretary acts as clerk incidental to her regular duties.

The Department is very much scattered, being distributed among the health officer's private office, the City Hall which houses the registrar and the sanitary inspectors, the Health Center in which the municipal clinics are held, and the private laboratory of the bacteriologist.

The total expenditure of the Department for 1923 was \$23,163.20 or 48

cents per capita. If \$1,420.50 for the isolation hospital is deducted the per capita cost is 45 cents.

ACTIVITIES OF HEALTH DEPARTMENT

The Health Department is responsible for the usual Health Department activities with the exception of the tuberculosis work which is done by the county. There are also orthopedic clinics conducted by the state Board of Health in the city dispensary.

Vital statistics are in charge of the registrar, who is also employed in the office of the city chamberlain; this office is his headquarters. The records are not analysed or classified to a very great extent. The annual report includes only a statement of the total number of births and deaths, and single classification of deaths by cause.

The provisions for communicable disease control seem inadequate and the city ranks among the lowest of those surveyed in this activity. No one is assigned to this work except the sanitary inspectors who placard, fumigate, and distribute circulars of instruction; in very urgent cases the health officer is called. The isolation hospital cares only for smallpox cases. Neither spot maps nor charts of cases are kept. Vaccination against smallpox is not required of children before they attend school, and although free immunization against smallpox and diphtheria is available, the practice is not widespread.

The sanitation and food inspection for 1923 included a large volume of work, as indicated by the 3,084 sanitary inspections, and 2,415 inspections of food handling establishments, including groceries, markets, and so forth. Dairy inspection is made by the milk inspector, and a score card is used. Approximately 10 per cent of the supply is obtained from tuberculin tested cattle, and the safeguard of pasteurization is applied to only about 30 per cent of the total supply. Certified milk is not readily available. It would be desirable to increase considerably the percentage of milk pasteurized so that the potential danger of milk borne epidemics of communicable disease may be decreased.

THE CITY DISPENSARY

The city dispensary of the Health Center is a small building in which municipal clinics are conducted by several part-time physicians and the two public health nurses. Municipal clinics include venereal disease, pre-natal, infant and dental.

Venereal disease clinics are held twice a week for two hours. In 1923 there was a total of 2,245 treatments administered and 50 new cases were registered. The pre-natal clinics are held once a week; in 1923 the total attendance was 44, and 84 home visits were made by the nurses. There were 359 children observed at the infant welfare clinic, including infants and children of pre-school age, and 518 home visits were made in connection

with this clinic. The Center is the nucleus of an instrument for effective health work in the community, with an opportunity for growth in the volume of work done.

In addition to the municipal clinics, a tuberculosis clinic is conducted by the county in the Health Center once every two weeks for one hour, with a physician in attendance. In 1923, 81 patients were observed and 547 home nursing visits were made. There were 49 patients hospitalized in 1923 in the county tuberculosis hospital which is located in the city. A preventorium, which is outside of the city, and is furnished by the Federation of Charities, cared for about 75 children last year.

HEALTH OF THE SCHOOL CHILD

The supervision of the health of the school child rests with the Department of Education. The city ranks among the upper five cities in achievement in this field. Medical inspection is carried on by a staff of three part-time physicians, who devote about 15 hours a week to this work, and four full-time nurses. Each child is inspected annually, including those in the six parochial schools, and once every three years a very careful and thorough examination is made. A unique feature is the annual examination of teachers also. Heart and lungs are examined with a stethoscope, and clothing opened up. Corrections are obtained through follow-up work by the nurses and good results have been obtained as shown by the correction of 409 throat and nose defects, 249 vision defects, and 779 dental defects, which included fillings, cleanings and extractions made in the dental clinic conducted by the Health Department.

Children are weighed once every month and measured twice a year. Milk, furnished by the Parent-Teachers Association, is given underweight children who are unable to pay for this service. There is an organized course in health education, supervised by the nurses, which is started in the kindergarten; health posters are made by the children, and an effort is made to correlate health education with other subjects.

The provisions for recreation, both for the child and adult, are noteworthy. There is a Community Service Recreation Committee and Park Board, which is a semi-public organization. It engages in a large and varied program for public recreation and directs the activities of the city playgrounds and parks.

VOLUNTEER AGENCIES

The Federation of Charities is the outstanding volunteer agency doing positive health work, and has been mentioned in connection with the tuberculosis preventorium. In addition to maintaining the preventorium, it engages in a number of activities among which are family welfare and relief, a home for the aged, boy and girl scouts, a neighborhood house, and an orphans' home. Another contribution which it makes to the health work in

the community is the support of the Visiting Nurse Association, which consists of three nurses who visit all types of cases with the exception of contagious disease, and also do work for the Metropolitan Life Insurance Company. The budget of the Association is \$3,000. The American Red Cross furnishes a nurse who works in the county. The Rotary Club is interested in the welfare of crippled children. The Parent-Teachers Association furnishes milk for undernourished children.

COMPARISON WITH OTHER CITIES

As shown in the accompanying chart, Elmira ranks among the upper 29 cities surveyed in its achievement in four of the 11 major health activities, among the middle 29 cities in five activities, and falls below the middle cities in two of the activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹*	*	
Com. Dis. Control	H*		
V. D. Control	H*	*	
T. B. Control	O*		*
Pre-natal	H*		*
Infant	H*		
Pre-school	H*	*	
School	E*		*
Sanitation	H*		*
Laboratory	H*	*	
Pop. Health Inst.	H-O-P*	*	

¹See page 273.

The Health Department is responsible for the bulk of the health work being done in the community, and the results of its endeavor combined with that of the other agencies mentioned place the city well up in the middle group of cities surveyed. By increasing the use of the facilities now existing, the city can readily emerge from the middle class to the upper group of cities. For a city the size of Elmira it would be desirable to have the full-time services of the health officer. The centralizing of the Health Department under one roof would undoubtedly make for efficiency.

EVERETT, MASSACHUSETTS

Surveyed, March 24-29, 1924

The city of Everett, situated $3\frac{1}{2}$ miles directly north of Boston, was settled in 1630 and incorporated as a city in 1892. Up to that time it was a part of the city of Malden and was known as South Malden. The 1920 population was 40,120, of which 28 per cent were foreign born. The estimated population in 1923 was 42,511. One side of the city is devoted almost entirely to industries which include gas, chemicals, machinery, paint and leather. In the residential district the two-family frame dwelling predominates.

DEPARTMENT OF HEALTH

The Board of Health is appointed by the mayor and consists of three members, one of whom must be a physician. Members serve for three years, the appointment of only one expiring each year. The Health Department includes, besides the health officer who is a layman, an efficient clerk of many years experience, a milk and food inspector, three school nurses, one nurse dividing her time between tuberculosis and infant welfare work, four part-time school physicians and one part-time school dentist and one part-time dental assistant. The 1923 budget for the Health Department was \$32,829, or 76 cents per capita. Approximately \$8,000 should be deducted from this for garbage collection leaving a per capita of about 60 cents. There is also a special fund of about \$1,000 available for combating epidemic diseases. This fund was first created as a loan to the Health Department at the time of an influenza epidemic several years ago, but may now be used for any epidemic.

There is no physician or nurse in the Health Department devoting time to the control of communicable diseases, and except for spot maps of diphtheria and scarlet fever, no studies are made of these diseases. The tuberculosis dispensary maintained by the Health Department provides two clinics weekly. The total number of new patients examined at these clinics in 1923 was 60. Apparently more interest has been developed in home care of tuberculosis as during that same year 1,491 home visits were made by the tuberculosis nurse.

The same nurse devotes two hours a week to an infant welfare clinic and about ten hours a week to home visiting of infants. The clinic, which is not attended by a physician, has not been very actively promoted as is evident by the fact that, with 1,118 births in the city in 1923, only 245 chil-

dren were observed at the clinic and only 92 of these were new cases during that year.

Among the public health measures not provided for in Everett are venereal disease control, clinics for pre-natal cases and for children of pre-school age.

HEALTH SUPERVISION OF SCHOOL CHILDREN

School medical inspection service is provided by the Health Department. Children are given a rapid physical inspection every other year, without the removal or opening of the clothing. No examination of the lungs is made. Weighing and measuring of school children was begun in 1923 and all schools are provided with scales. The Health Department dental clinics for school children do a large amount of work. Records of other physical defects and their correction could not be obtained by the surveyor.

Milk is sold at cost in all the schools, during the morning session. Some Health Education work is being done, but there is very little effort to correlate it with other teaching.

Of the 10 schools visited in Everett at the time of the survey, three were wooden structures with wooden stairways.

VITAL STATISTICS

The city clerk is the registrar of vital statistics except that communicable diseases are reported directly to the Health Department. Burial permits are issued by the Health Department. This makes it possible for the Department to obtain immediate information of all deaths. Judging by the ratio of cases to deaths, communicable diseases are well reported. No annual report has been published since 1920.

VISITING DISTRICT NURSE ASSOCIATION

The District Nurse Association, with an expenditure for 1923 of \$4,860, employed two nurses who made a total of 3,938 calls during the year. About half of these calls were for obstetrical care. The association does some pre-natal and infant welfare visiting and tuberculosis nursing. During the summer it operates a tuberculosis preventorium where in 1923, 16 under-nourished children were cared for. The Association also conducts the work of the Modern Health Crusade in the fourth grade of the public schools.

WATER SUPPLY AND SEWAGE DISPOSAL

In common with several other cities adjacent to Boston, Everett uses the metropolitan water supply. There is no other private supply used for drinking purposes and no connection between industrial supplies and the municipal supply.

The sewerage system is part of the metropolitan system and serves the entire community.

COMPARISON WITH OTHER CITIES

Everett is grouped with the upper third of cities in three activities and with the middle group in five.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	★		
T. B. Control	H-P	.....		★
Pre-natal	P	.....		★
Infant	H-P	.....	★
Pre-school	★		
School	H	.....	★
Sanitation	H	.....	★
Laboratory	H	.....	★
Pop. Health Inst.	P★		

¹See page 273.

To strengthen its health program Everett should give some organized attention to venereal disease control and the hygiene of the pre-school child. A physician should be identified with the infant welfare clinics and clinic facilities should be available for pre-natal cases. It is quite generally agreed that the collection of garbage is administrative work which should be assigned to some department of the city other than the Health Department. This will permit the Health Department to center more of its efforts on the educational aspects of public health work.

FITCHBURG, MASSACHUSETTS

Surveyed, April 28-May 3, 1924

Fitchburg is in the north central part of Massachusetts, about 60 miles northwest of Boston, and at the eastern end of the famous Mohawk Trail. Growth has been slow. It became a town in 1764 and was incorporated as a city in 1872. The 1920 census places the population at 41,029, while the 1923 estimate is 42,183. Of this number 32 per cent are foreign born.

Fitchburg is largely an industrial and railroad center. It is, however, little subject to industrial depressions, largely because of the variety of products. Most of the enterprises are home-owned, long established, and of high quality. Cooperative promotion has been successful.

DEPARTMENT OF HEALTH

A Board of Health of three members, appointed by the mayor and confirmed by the council, serves for three years, only one new member being appointed each year. One member must be a physician. He acts as chairman of the Board and devotes some time each day to administration of the Health Department. The executive agent of the Health Department is a layman, as is also the efficient clerk of the Department, who is technically listed as an epidemiologist. Other full-time employees are an inspector of milk and plumbing, two inspectors of meats, provisions and slaughtering, two school nurses, one school dentist and one dental assistant, and one nurse who divides her time between tuberculosis and venereal disease work. Part-time employees include a bacteriologist, three school medical inspectors, one physician for the tuberculosis clinic and one for the venereal disease clinic. The 1923 budget of the Health Department was \$34,520, or 81 cents per capita.

Communicable disease control is not as well developed in Fitchburg as in many other cities visited. There is no physician or nurse in charge of this work, and spot maps of the incidence of these diseases are not kept. In 1923 and 1924 an active campaign was waged to immunize children against diphtheria, 697 children receiving toxin-antitoxin. In spite of the industrial character of the community, the mortality from diarrhea and enteritis under two years has been quite low for the past few years. There have been only 19 cases and one death from smallpox since 1910. All children are required to be vaccinated before being admitted to the public schools.

The Health Department maintains two tuberculosis clinics and a special consultation clinic, to which physicians may bring their own cases, and contributes \$30,000 to the support of a local hospital which provides 30 beds for the care of tuberculosis cases. However, the two clinics are both held in one outlying district of the city which is not readily accessible to a large portion of the population. Very few of the local physicians take advantage of the consultation clinic.

The three venereal disease clinics, maintained by the Health Department in conjunction with the State Health Department, do not appear to have received adequate promotion, the total attendance for 1923 being only 490.

HEALTH SUPERVISION OF SCHOOL CHILDREN

The Health Department gives an annual physical examination to children in both public and private schools. The examinations are made at the rate of about 15 an hour. The records of the examinations were not in very satisfactory form. It was difficult to obtain from them accurate information as to defects observed or corrections obtained. Steps were being taken to remedy this difficulty by introducing a standard record card recommended by the State Department of Education. Very little has been done with weighing or measuring children and no special open-air or nutrition classes have been provided. One school dentist and an untrained assistant are doing conscientious work over long hours, but are unable to do all the work that should be done. There is an organized course in hygiene, but little effort is being made to correlate Health Education with other subjects.

The Visiting Nurse Association, with a budget of \$20,000, employs 11 nurses including a very competent superintendent. The association maintains four clinics in different sections of the city for children under five years of age. However, there is a physician in attendance at only one of these clinics and the scope of the work is necessarily somewhat limited. The nurses weigh and measure the children, and give instruction in the preparation of modified milk formulæ and the hygienic care of infants and older children. There were 1,613 children observed at these clinics during 1923, and 8,829 home visits were made. There is no organized pre-natal service although the visiting nurses make a few pre-natal calls.

In addition to the infant welfare work, the association takes care of surgical, medical, obstetrical and maternity cases. It also provides bedside nursing service for cases of tuberculosis, and performs all of the nursing work for the Metropolitan Life Insurance Company in the city. It also does the nursing work for three large mills in the community, devotes an hour daily in the Fitchburg High School, and performs the school nursing work in two small adjoining towns. The superintendent gives several lectures on hygiene in the schools each week.

MILK AND OTHER FOODS

Fitchburg consumes an average of one pint of milk per capita a day. This is somewhat above the average for the country. A city educated to the use of milk should have a thoroughly protected supply. In Fitchburg there is no laboratory control of the supply, and only about 22 per cent of the milk is pasteurized and about 5 per cent of the cattle tuberculin tested. Some supervision is maintained over food stores and restaurants.

COMPARISON WITH OTHER CITIES

In only one of the 11 major health activities, tuberculosis control, is Fitchburg among the upper third; in five activities it is grouped with the middle third.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....	★
Com. Dis. Control	H★		
V. D. Control	H	.....	★
T. B. Control	H	.....		★
Pre-natal	P★		
Infant	P	.....	★
Pre-school	P	.....	★
School	H	.....	★
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-P★		

¹See page 273.

The health work would be improved by a greater use of clinics, the establishment of pre-natal work, the organization of a comprehensive laboratory service, further control of the milk supply, and the institution of the newer and more efficient methods of communicable disease control.

FRESNO, CALIFORNIA

Surveyed, March 17-22, 1924

Fresno is situated in the center of the San Joaquin Valley. The city was founded in 1835 by trappers; it grew rather rapidly during the gold rush, and was incorporated as a city in 1885. Since 1910, growth has been rapid. The population in 1920 was 45,086, and the estimated population for 1923, 54,966. Foreign-born constitute about 19 per cent of the population.

Fresno is located in the midst of a rich agricultural country, the whole future of which depends on the further development of irrigation facilities. Included in the products are fruits, grain, dairy products, beef, and hay. Canning and packing of fruit forms one of the principal industries.

The residence district consists largely of the one-family bungalow type, with a few small apartment buildings.

DEPARTMENT OF HEALTH

Fresno is governed by a mayor and four elected commissioners. The Board of Health consists of the mayor, ex officio, and four physicians appointed by him and confirmed by the commission. The health officer is appointed by the Board of Health for a period of four years, and confirmed by the commission. The present health officer is a physician, who devotes about half-time to the Health Department. In addition to the health officer there are in the Department two full-time nurses, a bacteriologist, five food and milk inspectors, two sanitary inspectors, and one clerk. Three of the food inspectors are kept at the milk receiving stations of three dairy concerns for inspection work. Since the amount of their salaries is paid to the city by the dairies, they should not be charged to the Health Department.

The Health Department budget for 1923 was \$39,137.65, or about 71 cents per capita.

The nurse who visits cases of communicable disease placards the houses and gives verbal instructions; no printed instructions are left. Measles and whooping cough contacts are quarantined whether immune or not. The two nurses employed by the Health Department spend about two hours each morning assisting the school physician and two school nurses employed by the Department of Education, in inspection for contagious disease.

No spot maps are kept showing the distribution of communicable disease, and records of the numbers of cases reported previous to 1923 could not be

obtained by the surveyor. Children are not immunized against diphtheria, and smallpox vaccination is not required before children may attend school.

The vital statistics are kept by the Health Department clerk. No annual report is published and apparently the usual studies of statistics are not made.

About 85 per cent of the milk supply is pasteurized, and the laboratory reports show that the quality of the supply is above the average.

HEALTH OF THE SCHOOL CHILD

School health supervision is under the direction of the Department of Physical Welfare. The staff, employed by the Board of Education, consists of a physician, two nurses, an oral hygienist, and a supervisor of Health Education, all full-time employees. A large part of the morning is spent by the physician and two nurses in inspection for contagious diseases. Children receive a physical examination about once in three years. These examinations are usually made by the physician, but occasionally they are made by the nurse. It was not possible to obtain any record of the physical defects found in 1923. The supervisor of Health Education did much weighing and measuring throughout the primary grades in 1923, and made some interesting studies in checking up underweights, eating habits, and so forth. She also organized 160 underweights into nutrition classes. The school physician directs one smaller nutrition group in another part of the city.

PRIVATE AGENCIES

Fifteen private agencies united in 1923 to form a community chest. One of the most active of these members is the Red Cross, which employs two full-time public health nurses and operates four educational health centers for expectant mothers and those with babies, or pre-school age children. Physicians are present during conference hours. The nurses also carry health teaching into the homes. That these conferences would profit by a little greater effort at promotion is evident by the fact that only 175 children under one year of age attended during 1923.

A day nursery, which usually cares for about 15 children daily, increases its number to about 60 or 70 daily during the fruit packing season in September, October and November. The younger children have a mid-morning and mid-afternoon lunch and an afternoon rest period.

The Fresno Tuberculosis Association maintains one clinic a week, with a physician in attendance, and employs a nurse for home visiting. The San Joaquin Health Association provides a nutrition home for 18 undernourished children outside of the city.

No agency, either official or private, is doing any organized work for venereal disease control.

COMPARISON WITH OTHER CITIES

The accompanying chart shows the relative ranking of Fresno, as compared to the other cities surveyed, in the 11 major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P★		
Pre-natal	P★		
Infant	P★		
Pre-school	P★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H★		

¹See page 273.

The health program of the city is scattered among several agencies and varies markedly both in quantity and quality. The infant welfare program is intelligently begun and has excellent prospects for its growth, if sufficient interest in it can be aroused in the community. A more comprehensive health program by the Health Department is needed.

GALVESTON, TEXAS

Surveyed, February 25—March 1, 1924

Galveston is located on the northeast end of Galveston Island on the Gulf of Mexico. Streets are laid out with regularity, and the original plan was to make every tenth square a park. Commercial pressure has upset the plans but there are four of these squares now in existence, beautifully laid out as public playgrounds. Almost all of the streets are paved.

A tidal wave in 1900 wrought great destruction upon the city, and a careful engineering study was subsequently made to safeguard against future floods. The population in 1920 was 44,255, with 22 per cent negroes and 16 per cent foreign born. The estimated population in 1923 was 46,877.

The channel between the island and the mainland, well protected against storms, provides an excellent harbor and affords berths for more than 100 ocean-going vessels. Galveston is the leading cotton port of the world. It also exports great quantities of wheat and oil. The principal industries include marine ironworks and ship repairing, rice and flour mills, printing and binding, and meat packing.

DEPARTMENT OF HEALTH

Galveston's city government is administered by a mayor and four commissioners who also act as a board of health. The part-time health officer is appointed by this board for a term of two years. The present health officer is a physician who has served as city commissioner and as mayor previous to this appointment. He is assisted by six inspectors, a clerk and a statistician. The appropriation for the Health Department for 1923 was \$17,910, or about 38 cents per capita.

Vital statistics are kept in the Health Department. The percentage of births registered is high. The ratio of reported cases of communicable disease to deaths is fairly good, with the exception of tuberculosis. In only one year of the past ten did the number of tuberculosis cases reported exceed the deaths. There is no communicable disease nurse in the Health Department, and cases are not routinely visited by a physician from the Department. The communicable disease quarantine laws do not seem to be rigidly enforced, quarantine being largely left to the discretion of the attending physician. Tuberculosis cases are hospitalized in the same ward with other medical cases. Vaccination against smallpox is required for attendance at school, but a check made by the surveyor in the fifth grade indicated that only

about 39 per cent of the school children were vaccinated. So far there has been no effort at immunization against diphtheria. There is also no organized effort for the control of venereal disease although some patients are received at the out-patient department of one hospital. There are no venereal disease or tuberculosis clinics.

About two-thirds of the milk supply is pasteurized and this percentage has remained steady for several years. There is little effort being made to increase the amount of pasteurization. Greater stress is being laid upon inspection. Bacteriological counts ~~are~~ made less frequently than once a month.

HEALTH OF THE SCHOOL CHILD

The school medical inspection work is done by a part-time physician and a full-time nurse employed by the Board of Education. All children are given a rapid physical examination annually by the physician. Examination of the lungs is not part of the routine. It was not possible at the time of the survey to obtain complete records of defects found, or the number corrected. All schools are equipped with scales and children are weighed and measured twice a year. There are no open-air classes for underweight children, but milk lunches are available in the schools during the morning session.

There is a plan, beginning in the third grade, for the correlation of health education with other subjects. There is no director of health education in the schools, the work being carried on by the classroom teachers.

PRIVATE AGENCIES

The public health field work and bedside nursing is at present carried out by the Red Cross. Two full-time nurses are assisted by eight or nine pupil nurses from the public health nursing school of the University of Texas. This group has organized welfare clinics for infants, pre-school children and pre-natal cases. A large number of home nursing visits were made by this group in 1923. The nurses also attend a pediatric clinic and an obstetrical out-patient clinic at the University.

There are no day nurseries or nursery schools, but three institutions housed 168 children during 1923. All three of these homes have medical supervision but none of them has a trained dietitian.

A rather active Parent-Teachers Association has cooperated with the Board of Education in furnishing scales, milk for underweight children and playground apparatus for some of the schools.

COMPARISON WITH OTHER CITIES

The accompanying analysis shows the relative position of Galveston as compared with the other 85 cities for the 11 major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....★	.....	.....
V. D. Control		.....★	.....	.....
T. B. Control		.....★	.....	.....
Pre-natal	P	.....	.....	★
Infant	P	.....	★	.....
Pre-school	P	.....	.....	★
School	E	.....★	.....	.....
Sanitation	H	.....	★	.....
Laboratory	O	.....	★	.....
Pop. Health Inst.	H-P	.....	.....	★

¹See page 273.

Immunization against communicable diseases has not been emphasized. Cultures of diphtheria cases for release are only made at the discretion of the attending physician. In the amount of work being done for the control of venereal disease, tuberculosis, and other communicable diseases, Galveston is in the lowest 10 per cent of cities.

It is felt that the good pre-natal and child welfare work begun by the Red Cross should be further developed and that it should receive the interest and support of the Health Department.

GARY, INDIANA

Surveyed, April 21-26, 1924

Gary is located on the shore of Lake Michigan in the Indiana sand dune area, only a few miles from Chicago. The city covers an area of over 39 square miles, several times the area of most of the cities in this group. In some parts of the city the sandy soil is loose and drifting, while other parts are covered with woods and stunted vegetation. Soil is brought in for lawns.

The city was incorporated in 1906 with a population of 1,000. In 1920 the population was 55,378, and in 1923 it was estimated to be 69,054. Almost half of the population is foreign born. Only about 10 per cent are negroes.

Much money has been spent in recent years in developing parks, the present park area being about 600 acres. A park restaurant, a community house and a municipal bath house have been built in one park.

Several of the large manufacturing plants have built good houses but the supply is sufficient for only a small proportion of the workmen. Many of them live in crude wooden buildings constructed during war-time, or during the mushroom growth of the city. These buildings are occasionally condemned by the inspectors, forcing the occupants into worse crowding in other buildings.

The principal industries of the city are immense steel plants. One of them alone employs 16,000 men. These steel mills are equipped with good locker rooms, shower baths, lunch rooms, hospital and medical facilities.

DEPARTMENT OF HEALTH

The Board of Health, appointed by the mayor, consists of the health officer and two other physicians. The health officer is a practicing physician devoting only a portion of his time to the Health Department. He is assisted by one nurse, two laboratory technicians, two food inspectors, two sanitary inspectors, one of whom devotes about half his time to quarantining, a plumbing inspector and assistant, and a clerk. The appropriation for the Health Department for 1923 was \$24,491, or about 36 cents per capita. One sanitary inspector placards communicable diseases, and the nurse visits all cases. Communicable diseases seem to be very well reported with the exception of tuberculosis, where the number of deaths each year always exceeds the number of cases reported. The number of cases of smallpox, and of diarrhea and enteritis under two years of age is larger than in most

of the cities studied in this group. The Health Department has no spot map studies of communicable disease. There is no free immunization against smallpox, typhoid fever, or diphtheria. Smallpox vaccination is not required before children may attend school.

The milk supply is from tuberculin tested cows and is 100 per cent pasteurized or certified. Automatic temperature control record sheets are turned into the Health Department office weekly by the pasteurizing plants. During 1923 there were 3,104 visits made to food handling plants and 2,431 sanitary inspections were made.

Neither organized venereal disease nor pre-natal work is being carried on.

HEALTH OF THE SCHOOL CHILD

The staff for the school medical work employed by the Department of Education consists of the full-time directing physician, a full-time woman physician and five nurses. Children in the kindergarten, first, fourth and eighth grade, all new pupils, and candidates for the athletic teams are examined by the physicians annually. The paid staff is assisted by a dental clinic conducted by one of the churches, by the services of a third year dental student from Chicago, and by work among the colored children of the community provided by some of the colored dentists.

All children are weighed and measured annually, but there are neither special classes nor milk lunches for the benefit of underweight children.

Gary has the platoon school system. Health education is promoted very largely through the auditorium period. One man is giving full time to auditorium programs on health and safety. Physicians, special teachers and many others are cooperating in these programs. In addition, some of the classroom teachers are correlating health teaching with their general programs.

The medical supervisor is devoting serious study to the ventilating systems in Gary schools. Toilet and washroom facilities are better than in most cities and hot water, soap and towels were not only available but were being used by the children.

School lunches are served in most of the buildings. These are well supervised, in many cases under the direction of the cooking teachers, and considered by the school physician to be the real nutrition work of the school system.

Under the platoon system the playgrounds are in constant use, usually with a play leader present. All schools are equipped with gymnasiums.

PRIVATE AGENCIES

The United States Steel Corporation conducts an infant welfare clinic in a foreign district of Gary with a public health nurse in charge. This

service is for children of all ages and cares for sick children as well as well babies. Most of the work, however, is instruction and infant feeding.

The American Sheet and Tin Company conducts a community center with a nurse who does bedside work and some instructive work.

The Methodist Friendship House conducts a semi-monthly infant welfare clinic, a dental clinic, a weekly general medical clinic, and an occasional eye, ear, nose and throat clinic.

The County Tuberculosis Society employs one nurse who has charge of all activities for the entire county. There were 203 patients in their clinic during 1923. A tuberculosis sanatorium was being constructed at the time of the survey.

The many agencies doing some form of relief work do not cooperate, hence there is overlapping and duplication.

COMPARISON WITH OTHER CITIES

The comparison of health activities with other cities in the survey places Gary among the lower third of cities in five activities and with the upper third in four.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....	★
V. D. Control		.....	★
T. B. Control	P	.....	★
Pre-natal		.....	★
Infant	P	.....	★
Pre-school		.....	★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

Gary is one of the youngest cities in the group studied, and its housing facilities bear evidence of having been unable to keep pace with its rapid growth in population. The Health Department does not show balanced development, although in some individual activities, it has made strides ahead of many of the cities. The school health program is unusually well developed. On the other hand that important time in the child's life before he reaches school age, receives little recognition by official agencies, although the most complete and careful studies on the pre-school child made by Anna E. Rude, M.D., and published by the United States Children's Bureau in 1922, called attention to the need for this.

HAMTRAMCK, MICHIGAN

Surveyed, January 28-30, 1924

In its rapidity of growth and in the extraordinary predominance of a single foreign-born racial stock, and in its location within the metropolitan area of Detroit, the city of Hamtramck is probably unique. In 1910 it was a village of 3,559 inhabitants, in which the majority of voters were negroes. Then in 1914 the Dodge Brothers built their automobile plant in this village adjoining Detroit, while in the adjacent suburb of Highland Park, Henry Ford was expanding his small factory. The United States Census of 1920 revealed 48,615 inhabitants. In the opinion of several public officials, the population today is between 65,000 and 70,000, of which, it is generally stated, 90 per cent are of Polish stock. In 1920 there were 2,073 native whites of native parents.

The city is a solidly built-over, flat area of 1.9 square miles, of which from 20 per cent to 25 per cent is occupied by industrial plants. Its form is rectangular and besides its eastern boundary street only one main business street runs north and south throughout its entire two miles, while 33 cross streets run a part, or the entire mile that separates its east and west boundaries. The striking thing about these miles of streets is that they are filled with small single wooden houses, each with its yard. These are the 6,000 private homes which the Polish inhabitants acquire at the earliest moment that self-denying husbandry on the part of the entire family makes it possible. The frequency of bakery and pastry shops is also noticeable. It is not surprising, in view of its industrial character, its absence of a wealthy or leisure or professional class, and its rapid growth, that Hamtramck should not yet have reached the stage of civic consciousness or general prosperity which expresses itself in an attractive physical appearance and social and recreational developments. Moreover, it possesses a certain reputation for bitter political struggles which are carried into the administration of the city government, which changed from a village to a city in 1922.

DEPARTMENT OF HEALTH

The city council of five members, with the mayor and the health officer, acts as the Board of Health. The health commissioner is a physician engaged in private practice as well as in his official duties. The waiting-room and two offices of the Department of Health are the same as those used for the private offices of the health officer and two other physicians, neither of whom

is connected with the Department of Health. The personnel of the department consists of five nurses, two for communicable disease, two for school work and one for tuberculosis, three inspectors, a clerk, a part-time laboratory technician and a part-time dentist. It is interesting to note that the school nurses of the Department of Health are restricted to the health supervision of the 4,200 children in the three parochial schools and to the investigation of births. The public schools are served by nurses employed by the Department of Education. The annual report of the Department of Health, consisting of 20 lines of typewriting, enumerating the work performed by the 12 employees, showed a considerable amount of the usual activity. The tuberculosis nurse made 905 home calls and assisted at the clinic, which is conducted by the Detroit Tuberculosis Society. To this clinic 355 new patients and 236 former patients came. The vital statistics which should be available in a health department were only partly obtainable. The infant mortality rate was unknown.

HEALTH OF THE SCHOOL CHILD

The health supervision of the 7,700 public grade school children was found to be in the early stages of definite development, undertaken after the reorganization of the Department of Education. Two school nurses and their supervisors, all recently appointed, were occupied in weighing the children for the first time and giving minor treatments. Health examinations were to begin as soon as a school physician could be obtained. The chief health promoting influence has been the Health Crusade movement in which every school participates.

HAMTRAMCK'S BENEFITS FROM DETROIT'S HEALTH SERVICES

Hamtramck's proximity to Detroit has resulted in its utilization of several of Detroit's health services. Its water supply is the same as that of Detroit and it depends entirely on Detroit's Department of Health for the protection of its milk supply. Likewise, for hospital services, bedside nursing, infant welfare, and, in part at least, for medical services for tuberculosis, and family relief, the city depends on the services which Detroit supplies through its own agencies or indirectly finances through a local private agency, the Tau Beta Community House.

PRIVATE AGENCIES CONDUCTING HEALTH WORK

There is no locally supported organization conducting health work in Hamtramck. The excellent community house conducted by the Tau Beta Society, a society of prominent Detroit women, and financed largely by the Detroit Community Chest, emphasizes health work among children by holding clinics. The three nurses attached to this clinic and doing infant and child welfare home visiting belong to the Visiting Nurse Association

of Detroit. The Tau Beta Society also conducts a day nursery, a recreation field, skating rink, home economics classes, clubs, dances, and similar community activities. The local branch of the American Red Cross has expended \$8,000 on relief, medical and hospital work, while the city administration expended \$34,000 through its Department of Public Welfare. There is also a small community house conducted by the League of Catholic Women.

COMPARISON WITH OTHER CITIES

Hamtramck's position in the eleven major public health activities, as compared with the other 85 cities, is creditable in respect to sanitation, carried on by the Health Department, and its infant and pre-school work, conducted by private agencies.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	H-P★		
Pre-natal	P★		
Infant	P	.....		★
Pre-school	P	.....		★
School	H-E★		
Sanitation	H	.....		★
Laboratory	H	.....	★
Pop. Health Inst.	H	.....	★

¹See page 273.

Its laboratory and popular health instruction work is found in the middle group of cities. In the remaining activities it falls into the lower third of cities, owing to the absence or slight development of these activities.

HAVERHILL, MASSACHUSETTS

Surveyed, June 1-7, 1924

Haverhill is situated in the northeastern part of Massachusetts, near the New Hampshire border, 33 miles directly north of Boston. It is one of a large number of industrial communities on the Merrimac River. The surface of the city is undulating, and a number of small natural lakes lie within its limits. The city was settled in 1640, was incorporated as a town in 1645, and became a city in 1869. Bradford, predominantly a residential community on the south side of the river, was annexed to the city in 1897. The total area now included in Haverhill is 32 square miles. The city is 9 miles long and $3\frac{1}{2}$ miles in average width. The leading industry is the manufacture of footwear. Haverhill is one of the largest producers of boots, shoes and slippers in the world; it is estimated that at least 95 per cent of its manufacturing plants are engaged in this industry. Other articles manufactured are woolen goods and hats, box board, and wooden and paper boxes. According to the federal census, the population was 44,115 in 1910, and 53,884 in 1920, of which 25 per cent were foreign born. The estimated population for 1923 was 57,405.

MUNICIPAL ORGANIZATION

In 1908 government by commission was adopted, the governing body consisting of a mayor and four aldermen, elected for terms of two years. Although not provided for in the charter, the administrative functions of the city are divided among the five members of the municipal council, the departments being, Finance and Accounts, Highways, Public Safety, Public Property, Health and Charities.

DEPARTMENT OF HEALTH

The Board of Health, which is appointed by the council, consists of three members. The health officer, whose official title is agent and clerk, is appointed by the Board for an indefinite period. This position is now held by a man who has been in the service for ten years; he devotes full-time to his duties. In addition to the health officer, there is an administrative assistant, an inspector of plumbing, two inspectors of milk and slaughtering, one of whom is a part-time worker, a bacteriologist, one child welfare nurse, one nurse whose time is divided between child welfare and venereal disease

work, and two tuberculosis nurses. The staff provided for medical supervision of school children consists of four part-time physicians, one half-time school dentist, a full-time dental hygienist and three nurses. It is interesting to note at this point that in 1911 there was only one public health nurse in the Department. In addition to the personnel listed, the following are also included: a medical director of the venereal disease clinic, and a medical director of the tuberculosis dispensary, both of whom are part-time employees, and two full-time nurses, one of whom is the superintendent of the contagious disease hospital, and the other the superintendent of the tuberculosis sanatorium.

The expenditure of the Department, covering the salaries of the personnel itemized, and the expenses of the work done by them (exclusive of the contagious disease hospital and the tuberculosis sanatorium), was \$32,623 in 1923, or 57 cents per capita. The total hospital expenditure, including the four city hospitals, was \$165,872.35, or \$2.99 per capita.

The work of recording and compiling vital statistics is shared by the Health Department and the city clerk. Births and deaths are reported to the latter, and communicable diseases are reported to the Health Department. This arrangement is universal in the New England cities and in this case the record keeping is particularly satisfactory. It would seem desirable, however, to have birth and death records within the Health Department for analysis, as these are of great importance to the health officer in formulating his program.

The achievement of the city in the control of communicable disease compares favorably with the other cities surveyed. It is to the credit of Haverhill that there has not been a single death reported from smallpox since 1910, and that during this period there has been only one case of the disease. Factors contributing to this record are the requirement of vaccination of all children before they are allowed to attend school, and the maintenance of a weekly vaccination clinic by the Department of Health. Not only is free immunization against smallpox offered, but also against typhoid and diphtheria. An extensive campaign has been waged against diphtheria since 1920, and a Schick clinic is now being held. In 1922, especially, a large number of children were immunized. A contagious disease hospital is provided, the superintendent of which is a Health Department nurse, who is assisted by five other nurses.

The control of tuberculosis is provided for through the maintenance of home nursing service, a tuberculosis sanatorium, a tuberculosis clinic held four hours a week, and a special consultation clinic held once a month with a physician from the state sanatorium in charge. During 1923, 423 patients were observed, 112 of whom were new, and 2,684 visits to the home were made by the two Health Department nurses.

The sanatorium, used entirely for adults, has 32 beds. During 1923, 49 patients were admitted. The cost of operation, \$2.57 a patient a day, is ex-

ceedingly low. There are five nurses at the institution, one of whom, a Department of Health nurse, is the superintendent.

Haverhill ranks among the highest 29 of the 86 cities surveyed in the available machinery for the control of tuberculosis. Nevertheless, its present position in this group would be materially improved by placing greater emphasis on the preventive side, by establishing open-air classes for pre-tuberculous children, including tuberculosis contacts, and by providing preventorium facilities. Nutrition classes for underweight children have been organized in the schools by the local tuberculosis association, and a special nurse has been employed for this purpose.

HEALTH OF THE CHILD

The Health Department, as the official agency responsible for the health of the child, provides practically no pre-natal care; the only infant care provided is through visits to the home by the two child welfare nurses, one of whom devotes only part of her time to this work. Infant welfare clinics were held at one time, but were abandoned, it is said, on account of the opposition of the private physicians. Almost no service is provided for the care of the pre-school child. Obviously, the existence of these conditions handicaps the efforts of the Health Department to promote the health of the community. Medical supervision in clinics for pre-natal, infant and pre-school child cases, together with adequate home visiting by nurses would materially strengthen the city's child health work.

The medical supervision of the school child is a favorable contrast to the lack of service provided for his care before he reaches school age. The work is under the supervision of the Department of Health, and the staff provided for it has been itemized previously in the discussion of the personnel of the Department. A dental clinic is held, at which only the poor are treated, and no fee is charged. Haverhill compares favorably in medical supervision of school children with the other cities surveyed, but it is felt that the work of the nurses might be further coordinated for more effective service. At present, each works more or less independently, keeping her own records, and making her own reports, the individual reports being published. This method of procedure makes it difficult to determine the results of the combined endeavor, especially since the reports of the divisions are not uniform.

MILK SUPPLY

The average amount of milk consumed is approximately one pint per capita a day. Most of the supply is produced within a radius of 35 miles and is therefore reasonably fresh. Although the laboratory control is complete and efficient, an additional precautionary measure that should be taken, is the extension of pasteurization. At present only 25 per cent of the supply is thus safeguarded.

SEWERAGE

It is estimated that approximately 85 per cent of the dwellings are connected to the public sewers. The sewage is discharged without treatment into the Merrimac River, which receives the sewage of many other large cities in Massachusetts and New Hampshire. The resulting pollution of the river is regarded as a menace. This subject has recently been investigated by the State Department of Public Health, and a report has been made recommending the construction of a sewerage system to conduct sewage from all towns along the river to the ocean.

COMPARISON WITH OTHER CITIES

The table below indicates that in five of the eleven major health activities Haverhill is classed among the upper third of the 86 cities surveyed. In four activities it ranks among the middle third and in two it ranks among the lower.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....	★
T. B. Control	H	.....		★
Pre-natal	★		
Infant	H	.....	★
Pre-school	★		
School	H	.....		★
Sanitation	H	.....	★
Laboratory	H	.....		★
Pop. Health Inst.	H-O-P	.....	★

¹See page 273.

The prenatal, infant and pre-school child work in Haverhill suffers in comparison with other cities, due to the lack of organized clinics under medical direction.

HIGHLAND PARK, MICHIGAN

Surveyed, January 31-February 2, 1924

Highland Park is surrounded entirely by the city of Detroit. It covers about 4 square miles in the shape of a rectangle—approximately 1½ miles from east to west and 2 miles from north to south. Like its neighbor it has experienced a phenomenal growth, increasing from 4,000 in 1910 to 46,499 in 1920. The population in 1923 was estimated to be 62,911. Of the 1920 population, only 27 per cent were foreign born as contrasted with 48 per cent in Hamtramck, an adjoining city also surrounded by Detroit. Its 8,000 homes for 10,000 families are, with the exception of a few areas, those of a high grade, well-to-do community.

Highland Park is the home of the great automobile plant of Henry Ford. This prosperous industry and the ideals of its founder undoubtedly have had an important part in determining the character of the community and maintaining it against undesirable encroachments. The Ford plant covers many hundreds of acres and employs some 20,000 workers. The other large plant in Highland Park is owned by the Maxwell-Chalmers Company.

DEPARTMENT OF HEALTH

The Board of Health is composed of the five members of the city council and the health officer, who is appointed by the commissioner of public works. The present health officer is a physician, serving on part-time, with eight years of service to his credit. He is assisted by a staff of ten full-time and three part-time workers. There are two communicable disease nurses, one maternity and child welfare nurse, one nurse detailed exclusively to health education, two sanitary inspectors, two milk and food inspectors, a bacteriologist, a clerk, a part-time school physician, and a part-time city physician. The budget for the Department was \$36,880, or 59 cents per capita.

The atmosphere of the attractive headquarters, the morale of the employees and the evidences of their effective work created a favorable impression. A unique development is the employment of a nurse whose sole duty is to promote health education, primarily through talks and the showing of health films. While two nurses devote their time to communicable disease control, there is only one nurse to provide nursing and clinic services for 6,000 pre-natal cases, infants and pre-school children. The work of the divisions of milk and foods and sanitation is particularly thorough. Owing to a close affiliation with the adjacent municipal hospital the clinics for children

up to 12 years of age are held there in cooperation with the pediatric department of the hospital. The pre-natal clinic is practically limited to a few prospective hospital patients, although 49 per cent of the births are in the hospital. The absence of tuberculosis or venereal disease clinics is noticeable.

HEALTH OF THE SCHOOL CHILD

Highland Park is justly proud of its Department of Education. It has spared neither brains nor money to give the best in teachers, program and equipment. The presence of a survey department in the administrative office is indicative of its attitude. Five nurses, one of whom is the supervisor, care for the 7,500 children in eight schools. Rapid examinations of all new entrants and half the old pupils are made early in the fall by a squad of seven physicians paid by the Health Department. The total number examined was 7,461. Defects numbering 5,548 were revealed and 1,159 corrections were obtained. One part-time physician remains throughout the school year to examine specially referred children and carry on smallpox and diphtheria immunization. These numbered 3,500 and 500, respectively, in 1923. The nurses follow up the physical defects, weigh and measure all children once or twice a year, and do other miscellaneous work in connection with the school health program. There is also a half-time dentist, a full-time dental hygienist and a nutrition expert. The correlation of health teaching with other subjects, however, did not appear to be well developed.

BENEFITS FROM DETROIT'S HEALTH SERVICES

Owing to its unusual location within the boundaries of Detroit, Highland Park enjoys the benefit of two services which Detroit provides. These are the additional supervision of its milk supply, 100 per cent of which is pasteurized or certified, and the nursing service of the Detroit Tuberculosis Society. Its water supply, however, is independent of Detroit.

OTHER AGENCIES

Highland Park is excellently provided with a 110 bed municipal hospital, with a 23 bed communicable disease annex and a training school for nurses. In its Community Center there is an interesting example of cooperation and coordination in the field of social work, since its director is also the city superintendent of charities, expending \$16,884 of Detroit Community Chest money for the private activities of the center and \$10,000 from the city of Highland Park for public charity work.

Most notable, moreover, is its municipal Recreation Commission. This is composed of members of the school board, the city council and a citizen-at-large. Its budget of \$43,000 is met by appropriation of the two bodies in equal measure. Its personnel, recreational resources, and a directed program

are unusually extensive. The great recreation field and field-house given by Henry Ford is exceptional.

COMPARISON WITH OTHER CITIES

Highland Park, as shown in the accompanying table, does very creditably in those fields of activity in which it is seriously engaged.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	Q ¹★		
Com. Dis. Control	H	.....	.....★
V. D. Control	★		
T. B. Control	★		
Pre-natal	H-O	.....		.....★
Infant	H	.....	.....★
Pre-school	H	.....	.....★
School	H-E	.....		.....★
Sanitation	H	.....		.....★
Laboratory	H	.....		.....★
Pop. Health Inst.	H	.....	.....	.....★

¹See page 273.

Work for the school child, sanitation, laboratory and popular health instruction all receive high credit. Its child welfare work is far less comprehensive than many of the cities, a fact of which the department is fully aware. Highland Park does practically nothing in venereal disease and tuberculosis control. Its vital statistics bookkeeping could be much improved and made more valuable to the Department of Health. Its progressive spirit and its body of intelligent well-to-do citizenry may be trusted, however, to improve constantly its health service to a point where it is entirely adequate.

HOBOKEN, NEW JERSEY

Surveyed, May 5-10, 1924

Hoboken is situated on the west bank of the Hudson River, directly opposite the lower section of New York City. Its location in the port of New York, with over a mile of water front, in the midst of a densely populated metropolitan section is important industrially. It is the terminal of several large railroads and steamship lines. Some of the principal articles of manufacture in the city are foundry and machine shop products, bread and bakery products, furniture, paper boxes, drawing materials, pencils, and baking powder.

With an area of $\frac{3}{4}$ of a square mile and a population of 68,166 in 1920, it is exceeded only by New York in density of population per square mile. The predominant types of dwellings are the tenement and apartment house.

DEPARTMENT OF HEALTH

The municipal government is administered by the mayor and five commissioners, each of whom supervises a city department. The health officer is appointed by the mayor for a term of four years. The position is a part-time one. The present health officer is a physician who is also in private practice. He has held this position for about 14 years. Appointments of other employees in the Health Department are made by the city commission. In addition to the health officer there are a registrar for vital statistics, five sanitary inspectors, one food inspector, a plumbing inspector, a pound keeper and two nurses, one of whom devotes full-time to communicable disease control. The maternity and infant hygiene work is conducted by the Baby Welfare Clinic, and a special municipal appropriation is provided for it. A physician is employed who gives five hours a week, and there are also three full-time nurses.

The total budget appropriated to the Health Department for 1923 was \$34,195, or about 50 cents per capita.

The activities of the Health Department are confined largely to vital statistics, communicable disease control, maternity and child hygiene, and sanitary inspection. No annual report is published, and the tabulations of births and deaths are less complete than usual. There is no venereal disease service. Tuberculosis service is provided by the Hudson County Tuberculosis Association and is particularly well directed and conducted. The De-

partment of Education is responsible for the medical supervision of school children.

Communicable disease reporting seems to be fairly complete. No spot maps of cases are kept, but a chronological weekly chart is maintained. The health officer is available for diagnosis of doubtful cases of communicable disease. Laboratory diagnosis is done by the county laboratory. It is a requirement that children be vaccinated before they may attend school. No figures are available showing the number of vaccinations made by the Health Department in 1923. No effort is made to promote the use of toxin-antitoxin.

Figures showing the volume of work done by the sanitary and food inspectors could not be obtained. The milk supply is practically all pasteurized. No regular dairy inspection is maintained by the city but the state and county furnish practically all the control necessary to assure a safe milk supply. Laboratory analyses of milk samples are made in the state laboratory. The public water supply, which is universally used, is obtained from Jersey City, and is of satisfactory quality.

The Baby Welfare Station conducts pre-natal, infant and pre-school child clinics, and provides follow-up visits to the homes by the nurses. The pre-natal service reaches about 10 per cent of the city. There is no physician in attendance at the pre-natal clinics, which are conducted by the nurses. The infant welfare service is better organized and developed. Here a physician is in attendance one hour a day for five days a week. In 1923 there were 1,100 infants under one year of age cared for, and 1,823 home visits were made by the nurse to infants and pre-school children. Almost 75 per cent of the total births in the city have post-natal supervision to the extent of at least three calls. Treatment is given to sick babies at the clinic. Cases of eczema and anemia are given heliotherapy. In 1923 there were 24 new cases of pre-school age registered at the station, and there was an attendance of 800.

HEALTH OF THE SCHOOL CHILD

The staff provided for the medical supervision of the school child, which is under the direction of the Department of Education, consists of a part-time medical director, assisted by three physicians, two nurses, and a full-time dentist. Each child is examined twice during his school career by a physician. The nurses assist by making inspections of vision, hearing, and so forth. The examinations are made at the rate of 10 to 15 an hour. No specific records are kept of the number of defects found or corrected. Of the 10,420 children examined in 1923, 4,083 were reported for treatment. Dental inspection is included in the medical examination. The dentist conducts school clinics every morning. The dental report for 1923 records 1,346 new patients, 1,346 extractions, 4,171 treatments, and 2,450 other operations.

School children are weighed and measured twice a year, but evidently

little use is made of the educational value of the classroom weight record. In some of the schools there are classes for physically subnormal children.

Of the nine schools visited three had outside toilets, the toilet rooms were not clean in six, and none of the lavatories were provided with towels.

PRIVATE AGENCIES

The Hudson County Tuberculosis Association, with headquarters in Jersey City, conducts a clinic six times a week. A physician is in attendance, and follow-up visits to the homes are made by the nurses. During 1923, there were 218 adults and 264 children as patients at the clinic, of which 194 were new patients. The nurses made 2,023 visits to the homes. During the same year 34 patients were hospitalized, four of whom were children.

The Recreation Association supervises eight playgrounds in the city. They are small in area, but are equipped with apparatus, and are particularly necessary because of the congestion.

COMPARISON WITH OTHER CITIES

Hoboken ranks among the upper 29 cities in three of the 11 major activities, among the middle 29 cities in two activities, and among the lower 28 cities in six.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....	.....★
V. D. Control	★		
T. B. Control	P	.....		.....★
Pre-natal	H★		
Infant	H	.....	.....★
Pre-school	H	.....		.....★
School	E★		
Sanitation	H	.....		.....★
Laboratory	O★		
Pop. Health Inst.	★		

¹See page 273.

HOLYOKE, MASSACHUSETTS

Surveyed, June 12-14, 1924

The City of Holyoke is located on a sweeping curve of the Connecticut River about 12 miles north of Springfield and 107 miles west of Boston. It is situated in the heart of a beautiful, rolling, wooded country, which forms the foothills of the Berkshires.

In 1920, it had a population of 60,203, and in 1923, it was estimated to be 61,094, 34 per cent of which were foreign-born whites. The whites of native parentage represented only 18.2 per cent of the total population. The city covers an area of 22.9 square miles, and in 1920, had 5,706 dwellings, and 12,948 families.

Holyoke is primarily an industrial city, and is known the world over as "The Paper City." It is the home of 5 great paper mills, and is also a center for the manufacture of silk and woolen fabrics. Here, too, are located what are probably the greatest power pump works in the world.

Although the greater portion of the city is not very attractive, some of the more well-to-do residential districts are unusually beautiful. Within a radius of 12 miles from Holyoke are located Smith College in Northampton, Mount Holyoke College in South Hadley, and Amherst College in Amherst.

DEPARTMENT OF HEALTH

The city is governed by a mayor and council and Board of Aldermen. The Board of Health, consisting of three members, is appointed by the mayor for a term of three years, the term of the members overlapping so that only one new appointment is made each year. The health officer, a layman trained in the school of experience, has directed the department for the past 18 years. He had previously served on the Board of Health and been the chief of police.

In addition to the health officer there are a clerk, 3 sanitary inspectors, one of whom is the deputy health officer, 2 inspectors of milk and vinegar, one inspector of meats and provisions, a contagious disease nurse and a social service worker. All of these are full-time employees. The part-time employees are a bacteriologist working about 1½ hours per day and a tuberculosis diagnostician giving 6 hours per week. The budget represented by this personnel and their work amounted in 1923 to \$30,560, or 50 cents per capita.

The account of the Department of Health expenditures is not complete without mention of the Carpenter Hospital of 20 beds for communicable diseases and the Holyoke Tuberculosis Sanitorium of 56 beds, which are administered by the Department at a cost of \$27,800 and \$24,100 respectively. Noteworthy as is the willingness of the citizens of Holyoke to tax themselves 85 cents apiece for hospital treatment of these communicable diseases, the question must be raised whether the expenditure is the wisest and most economical one that could be made of these funds. Only 40 advanced adult patients were cared for in the tuberculosis hospital in 1923. The same amount of money would undoubtedly care for a larger number of patients in one of the state sanitoria. As a matter of fact, 28 additional patients were admitted to state sanitoria. The Carpenter Communicable Disease Hospital admitted 93 patients during 1921, (last available report) at an average cost per patient of \$320. Many cities two and three times as large as Holyoke expend for communicable disease hospitalization only a small fraction of what Holyoke expends for this purpose.

In view of the heavy emphasis given to the hospitalization of tuberculosis and the other communicable diseases it is not surprising to find that the activities of the Department of Health are severely curtailed in several other important directions. Of the eleven major public health activities, the Department itself is engaged in, or responsible for, only four, namely, communicable disease control, tuberculosis, sanitation and laboratory. In none of these activities does its work seem of more than average attainment as compared with other cities of its size. The achievements for which it deserves most praise are the completeness of reporting of communicable diseases, the increased pasteurization of milk, now approximately 90 per cent, and an aggressive food inspection service. Its laboratory work seems in quantity and variety of service rendered far below the average attained by the majority of the cities.

MUNICIPAL CHILD WELFARE COMMISSION

A striking feature of the organized health work of Holyoke is the existence of a special Child Welfare Commission, financed by municipal funds but entirely separate from the Health Department. Pre-natal, infant and pre-school work of excellent character is conducted by this commission. Approximately 33 per cent of the total number of births in the community are registered as pre-natal patients and 40 per cent of the births in Holyoke occur in hospitals. The infant welfare service is well developed, reaching approximately 50 per cent in the clinics, although the preparation and sale of modified milk as prescribed by the physician, probably influences the popularity of the clinic. A pre-school clinic is also operated by the Commission, while a second clinic is conducted by the Catholic Ladies' Guild in connection with their day nursery. Holyoke is one of the three cities

among the 86 which dignify the pre-school child by maintaining for him special clinics separate and apart from the infant clinics.

HEALTH SUPERVISION OF SCHOOL CHILDREN

In 1915 the school health work in Holyoke was transferred from the Department of Health to the Department of Education. At the time of the survey the Department of Education was expending \$6,775 for the salaries of one full-time and one part-time physician and two nurses. The outstanding achievement of this staff has been the vigorous campaign waged against diphtheria through the immunization of 3,633 school children between January and May, 1924. Vaccinations against smallpox were also given to 1,239 children. Unfortunately no records are kept of the physical defects found in the rapid physical examinations and no records are available to show the number of defects which have been corrected. The Department of Health cooperates closely with the Department of Education in the control of communicable diseases, by notifying the school physicians daily of all new cases of disease. The class-rooms of the reported cases are visited and suspicious contacts are excluded. In 1923, 102 children were thus excluded. The absence of any dental supervision or clinics is a serious defect in the school health program. On the other hand there are a number of praiseworthy features about the health program, notably its hygienic instruction and physical education work.

VENEREAL DISEASE CONTROL

A fourth division of the city government is responsible for the prevention of venereal disease, chiefly through the treatment of infected persons and the personal educational work of the clinic director. The City Hospital maintains two clinics a week under the supervision of a physician widely experienced in this field of work. The personality of the director is such that nursing or social service follow-up is largely unnecessary and none is provided.

VITAL STATISTICS

The fifth partition of responsibility for the public's health is found in the state practice of making births, deaths and marriages reportable to the office of the city clerk. Even under the best circumstances the results of this functional division of responsibility cannot be as satisfactory to the Department of Health as if it were responsible and as a rule the results are a serious handicap. It is only through the constant and intimate study and use of death and birth records by the Department of Health that the diagnosis and plan of attack upon a city's excessive mortality problems can be made. Holyoke has a high infant mortality rate, (it is 79th in rank among the 86 cities for the period from 1921-23), a high death rate from

diarrhea and enteritis, as well as a high still-birth rate, and a high maternal mortality. The reporting of communicable diseases to the Health Department, as elsewhere mentioned, is good with the exception of tuberculosis.

DISTRICT NURSE ASSOCIATION

The principal private agency devoted to health work in Holyoke is the District Nurse Association, organized in 1906 and now consisting in 1924 of a superintendent, five nurses, a clerk and a pupil nurse, with a budget of \$13,392. The visits for the year ending February 1924 were 16,486 in number and covered general bedside, pre-natal, maternity, infant and tuberculosis nursing, reaching well over 2,000 patients. Its obstetrical service assisted at the birth of 356 babies.

COMPARISON WITH OTHER CITIES

In order that the relative position of Holyoke may be compared with the other 85 cities the following table is presented. Holyoke stands among the upper third of cities in four of the 11 major health activities, namely, communicable disease control, pre-natal, infant and pre-school work. It is with the middle group in five activities and with the lower third in two.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O★		
T. B. Control	H★		
Pre-natal	O-P★		
Infant	O-P★		
Pre-school	O-P★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-P★		

¹See page 273.

Holyoke presents a marked example of what might be called the division of public health responsibility. Five branches of the city government are charged with the independent conduct of what is generally considered the specific function of the health department. The result is inevitably a weakened department of health with less opportunity for a far-seeing leadership in the development of a complete public health program.

There is good reason for believing that a greater centralization of work would be less costly and more efficient.

HUNTINGTON, WEST VIRGINIA

Surveyed, March 3-8, 1924

Huntington lies on the south side of the Ohio River near the junction of three states, Ohio, Kentucky and West Virginia. It is in a large open valley with low hills bounding the southern side of the city. The city has had a remarkable growth in the last ten years so that everything is comparatively new. The streets are wide and well laid out and the buildings are practically all of modern construction, brick predominating even among the majority of small houses. The population at the 1920 census was 50,177, and the estimated population in 1923 was 59,918. There are 6 per cent negroes, and 2 per cent foreign born whites.

There are two large state institutions in the city, the Huntington State Hospital for the Insane, and Marshall College, a state normal school.

Huntington's industrial development has been rapid in the last ten years. There are good transportation facilities and plenty of raw material for the manufacture of products of iron, glass, clay and wood. The Chesapeake and Ohio Railroad employs nearly 6,000 men in its shops.

DEPARTMENT OF HEALTH

The Board of Health consists of the health officer as chairman, the mayor, the commissioner of health and finance, the city clerk, and the chief sanitary inspector. The health officer, who is a physician, devotes about half-time to his official duties and the rest of the time to private practice. Other members of the Health Department staff include one full-time nurse, devoting her time to communicable disease work and the venereal disease clinic, two full-time sanitary inspectors, a full-time clerk, a part-time bacteriologist, a part-time food inspector, and a part-time physician in the venereal disease clinic.

The budget for 1923 for strictly health activities was \$12,050, or about 20 cents per capita. In addition there was \$3,800 for hospital service for the poor and \$88,000 for garbage collection and disposal, which included an unstated sum for new incinerators. The activities of the Health Department are limited. They consist chiefly of routine control of communicable disease, inspection of foods and milk and sanitation, a venereal disease clinic and the supervision of garbage disposal. Communicable disease statistics are so meager that it is difficult to draw any valid conclusions either as to the prevalence of these diseases, or as to how completely they

are reported by local physicians. No spot maps are kept of the occurrence of these diseases.

Three clinics weekly for venereal diseases are maintained by a physician and a nurse employed by the Health Department. Attendance figures at these clinics for the year were not available.

HEALTH OF THE SCHOOL CHILD

Two half-time physicians and three full-time nurses carry on the school medical inspection work, examining all the school children annually. Practically all the schools are equipped with scales but the children are weighed and measured annually only. The records of physical defects are well kept, but owing to insufficient staff the nurses have been unable to do sufficient follow-up work and the correction of defects is not so well reported.

A good deal of attention is being given to health education in the schools. The Health Crusade of the National Tuberculosis Association is being carried on with an enrollment of over 2,000. Many of the teachers are giving supplementary health instruction, and the children are making health posters and booklets, and some of them are giving health plays. A definite course in hygiene has been prepared by the Director of Physical Education. Furthermore, about 60 teachers are taking supplementary courses in health education at the normal school located in Huntington.

VITAL STATISTICS

The vital statistics are kept by a local registrar under a new West Virginia law which went into effect the latter part of 1921. The whole state is working hard to be included in the Registration Area as soon as possible. Although the present system of record keeping in Huntington is an improvement over the former, yet at the time of the survey the Huntington records still seemed to be somewhat confused. City statistics were mixed with county statistics, and statistics for several years were mixed together. None of the usual statistical studies are made and no annual report is published.

HEALTH WORK OF PRIVATE AGENCIES

There is no Visiting Nurse Association in Huntington, but some of the work usually carried on by such an association is done by several separate organizations. All the local charities, health organizations, and so forth, have joined together to form the Council of Social Agencies, which has a total annual budget of \$150,000. Nearly all of these organizations are housed in the same building. The Baby Clinic maintains a clinic for prenatal instruction, infant health and the health of the pre-school child. A physician devotes part-time and a nurse full-time to this work. The Huntington Tuberculosis Association has a clinic with the services of a physician and a full-time visiting nurse. There is a well organized children's home

in the Huntington Union Mission which takes care of about 95 boys and girls.

COMPARISON WITH OTHER CITIES

A study of the accompanying table giving Huntington's relative rating in the 11 major health activities shows that this city is grouped with the lower group of cities in five.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O★		
Com. Dis. Control	H★		
V. D. Control	H	.....		.....★
T. B. Control	P	.....	.....★
Pre-natal	P★		
Infant	P★		
Pre-school	P	.....	.....★
School	E	.....		.....★
Sanitation	H	.....	.....★
Laboratory	H★		
Pop. Health Inst.	H-P	.....	.....★

*See page 273.

Among the 86 cities surveyed it was found generally true that the best work in these five activities is being done in cities where the activities are grouped under the Health Department. It would seem that Huntington, a growing, progressive city in so many respects, could well afford to increase its per capita expenditure for health and further the development of an efficient, well rounded Health Department.

JACKSON, MICHIGAN

Surveyed, March 20-26, 1924

Jackson is located in the southern section of Michigan, in a rich agricultural region, with excellent transportation facilities.

The population in 1920 was 48,374, with about 11 per cent foreign born and 2 per cent negroes. The estimated population in 1923 was 54,482.

Jackson has a wide variety of industries but chief among them is the manufacture of automobiles, automobile parts and accessories, garden tools, corsets and underwear. Railroad shops employ large numbers.

DEPARTMENT OF HEALTH

The Board of Health consists of the mayor and four commissioners, the city clerk and the health officer. The present full-time city health officer is a physician who was assistant to his predecessor for three years before taking charge of the department. He is assisted by a full-time city physician who takes care of the sick poor, conducts clinics, and is attending physician at the contagious hospital; a full-time school physician, a full-time milk and food inspector, a full-time sanitary inspector, a nurse who acts as laboratory technician and nursing supervisor, two school nurses and four nurses for general public health work, and one clerk. The health appropriation for 1923, inclusive of nearly \$6,000 for the out-patient department of the city hospital, was \$35,100, or about 64 cents per capita.

Jackson enforces strict regulations concerning communicable diseases. Cases and deaths are well reported. Typhoid fever cases are released only after negative laboratory tests. The health officer may require vaccination before children may attend school if a single case of smallpox exists in the city. During 1923 about 6,000 persons were vaccinated against smallpox and 2,252 doses of toxin-antitoxin were given.

About 40 per cent of the milk supply is pasteurized and all dairy cattle supplying Jackson are tuberculin tested. One full-time employee divides his time between laboratory work, dairy inspection, and food and meat inspections, with the result that only part of the meat slaughtered locally is inspected. During 1923 there were 1,069 food inspections. The sanitary inspector made 3,169 visits during that year.

In connection with the out-patient department of the city hospital, the Health Department conducts tuberculosis, infant welfare, general, pre-natal

and pre-school clinics with the city physician in charge. Twenty-eight expectant mothers attended these clinics in 1923. About 55 per cent of the births in Jackson are in hospitals.

The infant and pre-school clinics, held three times a week, are primarily for indigents both sick and well. Probably more than 50 per cent of the 666 children attending the clinic in 1923 were sick babies. Public Health nursing service is only given to well babies upon request of their private physicians.

HEALTH OF THE SCHOOL CHILD

School medical inspection service is carried on by the Health Department. The school physician meets the teachers of the first six grades during the first few weeks of school and gives demonstrations and instructions in regard to examinations of eyes, teeth, hearing, nose and throat, and calculation of percentage underweight. The teachers then make these inspections, referring all those with defects as well as those 10 per cent or more under weight to the physician. Following this he examines the first grade, fifth grade, and kindergarten in the order mentioned. The children in special classes for the backward are also examined as are those playing on athletic teams. Malnourished and pre-tubercular children are placed in an open air school where they are given milk lunches and special rest periods. There are also classes for vision conservation and for the deaf. A dental clinic at the hospital six half-days a week provides for dental corrections. A course in hygiene is given in the upper grades beginning with the fifth. Individual teachers have done good work correlating health with other subjects.

PRIVATE AGENCIES

The tuberculosis service in Jackson is carried on jointly by the county, the city Health Department, and the County Tuberculosis Association, the latter association furnishing a nurse. Most of the relief work for the city is handled by the Welfare Bureau.

More than half of the schools have active Parent-Teachers Associations which have been most interested so far in furnishing equipment for the schools, but recently a committee has been appointed to study the pre-school child. A national sorority maintains a summer camp for undernourished children near Jackson to which any child recommended by the school physician may go for two weeks. There were 188 children who went to this camp during the summer of 1923.

COMPARISON WITH OTHER CITIES

Jackson is one of the few cities which does not fall to a place in the lower third in any of the 11 major activities. Its health department machinery for carrying out a complete municipal health program is rather better organized than in the majority of the cities studied. Many of the

city clinics, however, have not been developed much beyond a service to indigents. The extension of the educational work of the clinics to reach a greater proportion of the population would be well worth while.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	.....	★
V. D. Control	H	.....	.....	★
T. B. Control	H-P	.....	.....	★
Pre-natal	H	.....	.....	★
Infant	H	.....	★
Pre-school	H	.....	★
School	H	.....	.....	★
Sanitation	H	.....	★
Laboratory	H	.....	★
Pop. Health Inst.	H	.....	.....	★

¹See page 273.

JOHNSTOWN, PENNSYLVANIA

Surveyed, March 17-21, 1924

Johnstown is located about 60 miles east of Pittsburgh in the narrow "Y" shaped valley of the Conemaugh River at the junction of Stoney Creek. The city, with an area of $5\frac{3}{4}$ square miles, stretches for six miles along this valley with a maximum width of about one mile. Its principal industries, the Loraine Steel Company and the Cambria plant of the Bethlehem Steel Company, occupy prominent positions along the river. The population of Johnstown estimated by the census as of July 1, 1923, was 69,966, of which 18 per cent are foreign born and 2 per cent are negroes. The steep hill-sides surrounding the city are dotted with mine openings where 20,000 tons of soft coal are mined annually for the local industries and for domestic use. One-third of the state's entire output of bituminous coal is mined within a 40 mile radius. As is inevitable in such a great industrial center, a heavy smoke cloud frequently hangs over a portion of the valley. To escape this the better residential districts have been developed on the hill top 500 feet above, just outside of the city proper, in West Mount and South Mount.

DEPARTMENT OF HEALTH

The city affairs are administered by a mayor and four councilmen, each having supervision of a portion of the municipal activities. The Bureau of Health, a division of the Department of Public Safety, is under the direction of a physician who has held the position for eight years.

The budget of the bureau amounts to approximately \$69,000 annually, divided as follows:

		Cents per Capita
Administrative Health Work.....	\$15,600	22.3
Other Bureau Activities		
Municipal Hospital (Contagious Diseases)	7,400	10.6
Plumbing Inspector	2,100	3.0
Garbage Collection and Disposal	44,000	63.0

ACTIVITIES OF THE BUREAU OF HEALTH

The field of service covered by the Bureau of Health embraces the registration of vital statistics, (contrary to the usual practice in the Pennsylvania cities); communicable disease supervision; inspection of milk and food

supply; the usual sanitary and nuisance inspection; some diagnostic laboratory work and a wide variety of services performed by a nurse. The present health officer gives part of his time to the direction of the bureau, the remainder to his private practice, and seems to look upon municipal sanitation and nuisance inspection as one of the major functions of city health work. This attitude no doubt results from the importance which, in the past, was necessarily attached to this service by reason of the almost universal lack of sewerage in the community.

The Bureau of Health receives and classifies the vital statistics of the city, transmitting the birth and death records to the state. No tabulation of the year's figures has been made since 1916, however, and there appears to be no application of these vital statistics to the bureau activities.

The laboratory service is conducted on a part-time basis by one technician who made last year about 600 analyses of milk, 90 of water and 113 throat cultures. The bureau feels that this service is adequate. The call for laboratory service is suggested by the fact that only 75 per cent of the milk supply is pasteurized; by the presence in the city of 50 private wells and 2 private water companies supplying treated surface water; and by the occurrence during 1923 of 253 cases of diphtheria, 45 cases of tuberculosis and 24 cases of typhoid fever.

That the hospitals maintain laboratory facilities doing work for the physicians at a moderate cost is not usually considered sufficient. The majority of the cities of this group provide for and encourage the use of the laboratory as a part of the public health program. On the whole it appears that the Bureau could make a larger contribution to the community health.

HEALTH SUPERVISION OF SCHOOL CHILDREN

The supervision of the health of school children is under the Board of Education. The personnel consists of two part-time physicians and five nurses. The children are examined annually by the physicians, but the scope of the examination is very limited due to legal restrictions on the removal of clothing for the examination of heart and lungs, and also by the brief time allotted to each examination. This service covers 33 public schools only, and does not affect the 13 parochial schools.

The number of children between 14 and 16 who have been granted working papers is apparently less here than might be expected because of the nature of the industries. Only 402 permits were issued in 1923, of which but 252 were classified as general, indicating continued employment.

ACTIVITIES OF OTHER ORGANIZATIONS

The health activities of other organizations in Johnstown are nearly as extensive as those of the municipality. The Red Cross has established a nursing and clinical service covering maternity, infant and pre-school child

hygiene as well as bedside nursing service. This work is conducted in close cooperation with the county medical director who has supervision over the practice of midwives so that there is good coordination of the entire child health service, although it has not been extended as far as it might be possible or desirable.

The state, through the county medical director, carries on the venereal disease and tuberculosis clinical service. The Cambria County Anti-Tuberculosis Association assists the state in its educational service.

CONCLUSION

Johnstown, as shown in the accompanying chart, occupies a middle position as compared with the other 85 cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	H-O	.....	★
T. B. Control	O	.....	★
Pre-natal	P	.....	★
Infant	P	.....	★
Pre-school	P	.....		★
School	E	.....	★
Sanitation	H	.....	★
Laboratory	H★		
Pop. Health Inst.	H-P	.....	★

¹See page 273.

In order of population, Johnstown is near the top, yet its health activities are above the average only in the field of pre-school child health and this largely due to the work of a private agency. In every field of health activity, however, the initial facilities have been instituted but they either have not been sufficiently developed to meet the city's need, or full use is not being made of the service offered. The child welfare service of the Red Cross is typical of the first instance:—a good service which should be expanded to reach a larger portion of the community. The municipal laboratory service is an example of a service which is offered with but apparently little attempt to popularize its use with the physicians. As a consequence it is not taking full advantage of a very important function, that of a bond between the Health Department and the physician.

KALAMAZOO, MICHIGAN

Surveyed, April 7-12, 1924

Kalamazoo, about midway between Chicago and Detroit, is located in a broad valley between low hills, with a river flowing through the center of the city. In addition to being the center of a rich agricultural district, specializing particularly in peppermint and celery, it also has a great diversity of manufactured products, including paper, corsets, stoves and medicines.

The population in 1920 was 48,487, of which 15 per cent were foreign born, Holland Dutch predominating. The estimated population in 1923 was 51,749.

The residential district is attractive because of its trees and its architecture. One- and two-family houses predominate.

DEPARTMENT OF HEALTH

The city has a city manager, and a mayor and commission. The commission acts as a Board of Health when necessary. The full-time health officer, a progressive man with many years' experience in public health administration, is assisted by an able and experienced superintendent of nurses and seven nurses doing generalized nursing, a city physician conducting a venereal disease clinic and clinics for the indigent sick, a bacteriologist and two full-time assistants, four inspectors of food and sanitation, and two clerks. Two pediatricians, a tuberculosis specialist and a psychiatrist give free clinic service to the Health Department. The Health Department has supervision over the following clinics: tuberculosis, venereal disease, mental, dental, eye-ear-nose and throat, pre-natal, and four infant and pre-school clinics in different parts of the city. The infant and pre-school clinics are financed by the Child Welfare League.

The health officer is director of Public Welfare but relief is administered by the Civic League which is the social service agency of the city.

The county maintains a contagious disease hospital in the city and the Health Department devotes more than the average amount of time to the control of communicable disease. However, the incidence of scarlet fever and diphtheria during the past five years has been high.

All vital statistics are kept in the Health Department but only a moderate amount of attention is given to the tabulation and interpretation of these records.

The Health Department nurses do a wide variety of work under the direction of a forceful woman. This supervising nurse is cognizant of the difficulties of infant and pre-natal service, she appreciates the value of women's clubs and recognizes the importance of having the individual nurses win the confidence of their districts. The Health Department nurses had a total of 12,872 visits to their credit in 1923. The outstanding items are 3,385 bedside calls, 4,243 pre-natal and infant welfare visits and 1,375 contagious disease calls.

About 88 per cent of the milk supply is pasteurized and there is active supervision of milk production by the Health Department. Apparently more emphasis is laid in the laboratory on sedimentation tests than on bacteriological examinations.

HEALTH OF THE SCHOOL CHILD

The school medical inspection staff consists of a half-time woman physician as director, a man physician giving one-half day a week, a half-time clerk, and half-time dentist, a full-time dental hygienist, and three nurses.

The school physician makes careful examinations of kindergarten and first grade children with the nurse, teacher and parent present at the examination. After all of the children in these grades are examined, she examines carefully the fifth grade children. The nurses check up the defects of the second grade children and also make inspection of the third grade children, under the direction of the school physician. The fourth grade children are also checked up on the correction of physical defects. The nurses follow the same plan in the sixth grade and look over the seventh grade pupils twice a year. All participants in competitive athletics are given a heart and lung examination.

The health education is in charge of the physical education supervisor. The third, fourth, fifth and sixth grades are organized under the platoon system. The primary grades are under the direction of an elementary supervisor who promotes a large variety of health projects and considers the health of the children probably the largest factor of her work. As a result of the platoon system with a special period for hygiene instruction the tendency is not to correlate the teaching very greatly with other subjects. Some sex hygiene instruction is given the seventh and eighth grade girls.

Every school has a gymnasium or playroom and physical education activities are organized along modern lines. One open-air school has been provided and there are nutrition classes.

PRIVATE AGENCIES

*In Kalamazoo there has been excellent cooperation between official and private agencies. It is the definite policy of the private agencies to initiate activities and then turn them over to the official agencies.

Outstanding among these private agencies are the Child Welfare League and the Civic League. The Child Welfare League, in existence for ten years, holds monthly meetings for study and discussion of child welfare. In cooperation with the Civic League and the Parent-Teachers Association, the Child Welfare League has brought to the city various well-known public health and children's specialists to lecture. The Infant Welfare Clinics, under the supervision of the Health Department, were begun by this league and are still financed by it. The nutrition classes in the public schools were also promoted by this agency.

The Civic League is the family social case work agency of the city. It employs a visiting housekeeper who is doing nutritional work in families where relief is given. She provides the milk and vegetables and works out budgets with proper diets. The league also furnishes the quarters for some of the Health Department clinics and pays the salary of one nurse who devotes most of her time to the clinics in the Civic League Building and does some of the tuberculosis follow-up work.

A public spirited citizen has raised funds for, and has given his full time to the development of a children's summer vacation camp. The camp has been in operation since 1916, and now has good permanent equipment and a staff of ten persons. In 1923, 452 children between the ages of seven and fourteen attended the camp for two weeks and about 35 undernourished children attended for a longer period, some of them for eight weeks.

COMPARISON WITH OTHER CITIES

Kalamazoo, as will be observed by the accompanying chart, has a well developed and balanced city health program, deserving of a position with the upper group of cities in a majority of its activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....	★
T. B. Control	H	.....	★
Pre-natal	H-P	.....	★
Infant	H-P	.....		★
Pre-school	H-P	.....	★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....		★

¹See page 273.

There is good cooperation between existing agencies and a progressive attitude.

In efforts to keep the public informed on matters of health, Kalamazoo ranks among the upper ten per cent of the cities studied.

KENOSHA, WISCONSIN

Surveyed, May 12-17, 1924

Kenosha is on the shore of Lake Michigan between Chicago and Milwaukee. Surrounding it is a rich agricultural district. There is a good lake harbor and excellent railroad facilities.

The original settlers in this city were largely German. Recently Italians and Sicilians have come to work in the industries. In 1920 the population was 40,472, of which 31 per cent were foreign born. The estimated population in 1923 was 46,662.

About one hundred different industries are represented in Kenosha, among which is the manufacture of automobiles, metal beds, underwear and fire apparatus. Wages are good and the industrial leaders take an active interest in the city's welfare. Sixty-five per cent of the people own their own homes, which are mostly of the one- and two-family type. The city has 175 acres of parks and recent plans for the beautification of the city provide for a mall surrounded by public buildings.

DEPARTMENT OF HEALTH

City business is well administered by a city manager and five councilmen. These councilmen act as a board of health to approve rules and regulations and budget, but they are not an advisory board. The present health officer is a physician, who has practiced medicine in the city for many years and is much interested in its welfare. The Health Department personnel includes also a full-time clerk, a full-time sanitary inspector, a full-time milk and food inspector, five full-time school nurses, and a sixth nurse who conducts Little Mothers' League classes in the fifth and sixth grades and does some communicable disease work. A full-time bacteriologist and an assistant do work for the district surrounding Kenosha, the state contributing somewhat to their support. A tuberculosis nurse, working under the direction of the health officer, is paid for by the sale of tuberculosis seals.

The budget of the Health Department for 1923 was \$26,355, or 56 cents per capita.

The duties of the Health Department include inspection of foods and sanitation work, vital statistics, supervision of the health of school children, communicable disease control, and cooperation with the State Department of Health and the State Tuberculosis Association in the maintenance of

venereal disease and tuberculosis clinics. The venereal disease clinics are held weekly. The state furnishes a nurse who spends two days a week in Kenosha doing follow-up work. One three-hour tuberculosis clinic is held weekly with two Milwaukee specialists in attendance. The health officer is the attending physician at the county tuberculosis sanatorium and is also director of one isolation hospital for communicable disease.

Excellent progress is being made in the control of the milk supply under a new ordinance recently adopted.

HEALTH OF THE SCHOOL CHILD

No physicians are employed in the schools throughout the year, but at the opening, 21 physicians rapidly inspect all the pupils. At this time some defects are noted, which are later followed up by the nurse, but most of her attention is given to communicable disease. Nurses make routine inspections for physical defects and weigh the children during the first month of school, after which they are weighed monthly by the teachers.

The public schools are making a methodical effort to correlate health education with all other subjects. Milk is available in the schools and a good many children are drinking it. There are open air classes for undernourished and pre-tuberculous children.

An outstanding program in connection with the public school is that of the Department of Public Recreation. The city recently created a fund for recreation purposes and specified the Board of Education as trustee. The program includes high school athletics and every kind of community interest, such as dancing, music, playgrounds, programs for various organizations and community centers. The department has done much to knit the entire community together.

SERVICE LEAGUE

The staff of the Service League includes a director and a clerk, a case worker, a visiting housekeeper, one infant welfare nurse and one nurse in charge of the clinics. This league is responsible for a free clinic service, maintained in a building of its own, largely financed by the community chest, and with physicians' services gratis. In this building are held children's clinics, chest clinics, eye, ear, nose and throat clinics, venereal disease clinics, gynecological clinics and dental clinics. There are also five infant welfare stations with physicians in attendance.

COMPARISON WITH OTHER CITIES

The accompanying chart, depicting the relative standing of Kenosha for the 11 major health activities, shows that it achieves a place in the upper third for five activities and in the second group for the remaining six.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	H-O	.....		★
T. B. Control	H-P	.....		★
Pre-natal	P	.....	★
Infant	P	.....	★
Pre-school	P	.....		★
School	H	.....		★
Sanitation	H	.....	★
Laboratory	H-O	.....		★
Pop. Health Inst.	H-O-P	.....	★

¹See page 273.

There is evidence of a steady health growth in all community activities and the Health Department is gradually taking on greater obligations. With the excellent cooperation now existing between the Service League and the Health Department it should be possible for the latter eventually to take over the entire responsibility for the clinics, depending upon the Service League to interest the community in new health enterprises and the initiation of other pioneer work. The Department of Public Recreation, which is already a wide spreading influence in the community, could well become a splendid means of popular health education.

LAKEWOOD, OHIO

Surveyed, June 9-14, 1924

Lakewood lies contiguous to the western and northern edge of Cleveland, and although a separate corporation, it can in many respects be considered a part of the city of Cleveland. It is almost entirely a city of residences for people whose business is in Cleveland; there are no hotels, nor even a telegraph office. The city is largely made up of small two-story homes, with good paving and fine shaded sidewalks. There is a zoning law which governs the location of the industrial and business districts. The possibility of incorporation with Cleveland has been frequently considered in Lakewood. The population in 1920 was 41,732, and the estimated population in 1923 was 51,304.

The manufacture of Ever Ready Flashlights is the only large industry in the city.

The Cleveland water supply, a good supply and well controlled, is available to Lakewood.

DEPARTMENT OF HEALTH

There is no board of health in Lakewood. The part-time health officer, appointed by the mayor, through civil service, for an indefinite period of time, is a physician devoting more than half his time to private practice. Other members of the Health Department staff include a clerk, a nurse, who divides her time between communicable disease and tuberculosis work, a bacteriologist giving about one-fourth of his time to the city, a milk and food inspector, and a sanitary inspector who is also the registrar of vital statistics. The appropriation for health for 1923 was \$12,267, or about 24 cents per capita. However, about \$5,000 of this was unexpended in 1923, making the actual expenditure only about 14 cents per capita.

Tabulation of vital statistics is a difficult thing in Lakewood as so many confinements and deaths occur in Cleveland hospitals. There were no spot maps of communicable disease distribution in the Health Department office and only very incomplete records of cases and deaths for the preceding years could be obtained.

Routine quarantine of communicable diseases is carried out with one nurse devoting half her time to visiting cases for instruction. The health officer spends one hour each morning at the Board of Education office inspecting children returning to school after contagious illnesses. Children must

be vaccinated before they may attend school. During 1923, 3,500 persons were vaccinated. Interest in diphtheria immunization has just begun and a few doses of toxin-antitoxin have been given.

About 95 per cent of the milk supply is pasteurized. As much of the supply used in Lakewood comes from the same sources as that sold in Cleveland, Lakewood probably benefits by the inspection work done by Cleveland. The laboratory analysis of milk done in Lakewood amounts to less than a single examination of each supply monthly. There were 600 inspections of food handling establishments and 700 sanitary inspections in 1922. Records for 1923 were not yet obtainable at the time of the survey.

The Department of Health, in cooperation with Lakewood Hospital, maintains at the hospital dispensary clinics for tuberculosis, venereal disease, pre-natal cases, infant and pre-school child welfare. Attendance at all these clinics was small, with the exception of the infant and pre-school clinic, where 1,011 children below 12 years of age were observed.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs one part-time physician and two full-time nurses for the high school. All children are given physical examinations annually. Insufficient follow-up is done to obtain correction of defects, owing to inadequacy of the nursing staff, and complete records of defects found and corrections made could not be obtained.

All schools are equipped with scales and children are measured twice a year and weighed every six weeks by instructors in the physical education department. Milk is available in only one school and there are no open-air classes for pre-tuberculous children. A dental clinic has recently been established in the schools. The equipment was supplied by the Kiwanis Club and the services of a dentist supplied by the dental society.

There is no organized course in hygiene, but some work is planned and directed by the supervisor of physical training, particularly interesting children in bringing their weight up to normal.

A large amount of money has been spent in recent years for maintenance and operation of the school system. Buildings are well equipped and the sanitary conditions of all the schools are good.

During 1923 the health officer gave physical examinations to 400 children before issuing working permits.

PRIVATE AGENCIES

A branch of the Cleveland Visiting Nurse Association operates in Lakewood. It had a budget of 3,500 in 1923 and employed three nurses doing generalized bedside nursing.

Several local clubs have health committees, but no organized program.

COMPARISON WITH OTHER CITIES

The accompanying chart shows that Lakewood falls into a place in the lower third of cities in five of the 11 major activities, not because of entire absence of these activities, but because the quantity of work being done is insufficient for the size of the city by comparison with the average amount being done by the 86 cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H★		
V. D. Control	H-P★		
T. B. Control	H-P★		
Pre-natal	H-P	.....		★
Infant	H-P	.....	★
Pre-school	H-P	.....	★
School	H-E★		
Sanitation	H	.....		★
Laboratory	H★		
Pop. Health Inst.	H	.....		★

¹See page 273.

The problem always arises in the case of a city the size of Lakewood, adjacent to a much larger city and in many respects a part of it, whether it is wiser for the smaller city to organize its entire health program independently or to make some financial arrangement for being included in the program of the larger city. The better course can only be determined by local conditions.

LANCASTER, PENNSYLVANIA

Surveyed, February 18-23, 1924

Lancaster, 69 miles west of Philadelphia, is the seat of Lancaster County, one of the most productive agricultural sections in the country. Approximately 92 per cent of the acreage of the county is devoted to farming; the main products are tobacco, corn, hay, wheat, dairy products and cattle. The city of Lancaster is the commercial and industrial center of this region.

Through a system of public markets, many of the farm products are sold to local consumers. There are good freight transportation facilities by rail. Auto truck service is used to a great extent, as the city is on the Lincoln Highway.

Lancaster was settled about 1717 by English Quakers and Germans, and chartered in 1818. It has grown steadily as a manufacturing center, with a large diversity of products. The chief articles of manufacture are linoleum, watches, umbrellas, cotton and woolen goods, cigars, iron and steel products, and candy. The city is built up around the main square, and extends one mile in each direction from it, covering a total area of four square miles. The business section is compact. The predominant type of home is the single family brick dwelling.

According to the federal census, the population in 1920 was 53,150, 5 per cent of which were foreign born. The estimated population in 1923, was 55,285.

DEPARTMENT OF HEALTH

Appointments to the Department of Health are made by the Board of Health, which consists of five members appointed by the Court of Common Pleas. Only a minor part of the health activities in the community is under the Health Department. The personnel of the Department consists of three persons, one a physician; who is health director, and also secretary of the Board of Health. He devotes part time to his duties in the Department, most of his attention being given to communicable disease work. The other two members of the Department are a full time health officer, whose work consists chiefly of inspection in connection with communicable disease and sanitation, and a full-time clerk. The budget of the Department was only \$4,500 for 1923, or 8 cents per capita. Its work, as indicated in the annual report, was limited to communicable disease control, the abatement of nuisances, and milk and market inspection.

Private agencies, the state, and other official municipal departments share the responsibility for the greater portion of the major health activities. Among the provisions made by the private agencies are pre-natal, infant and pre-school child care, including clinics and nursing follow-up in the homes, orthopedic clinics, and general bedside nursing. The state furnishes mental, dental, tuberculosis, and venereal disease clinics. The Board of Education is responsible for medical inspection of school children. The laboratory work in connection with the communicable disease service and the milk supply control is handled by a contractual arrangement with a private laboratory.

VITAL STATISTICS

The registration of births and deaths is in charge of the local registrar, but they are not classified in any way. The only information in this connection included in the annual report of the Health Department is a statement of the total number of births and deaths. Communicable disease cases are reported to the Department of Health. The certificates are copies, as required by law, but no tabulation is made of the information carried.

COMMUNICABLE DISEASE

The control of communicable disease is one of the chief functions of the Health Department. Due to the lack of mortality statistics, it is difficult to estimate the completeness of the reporting of cases. The methods of case record-keeping, which are fairly complete, include the maintenance of a spot map of several of the diseases, and a weekly report of cases. Free immunization against smallpox and diphtheria are readily available. Vaccination is a requirement before children can attend school. Recently a decided effort has been made by the school physicians to promote the use of toxin-antitoxin, and at the time of the survey many children were being immunized. During the last twelve months, approximately 1,500 children received treatment.

HEALTH OF THE CHILD

Private organizations furnish the existing provision for health service for the child until he reaches school age. Pre-natal clinics, with a physician attending, are conducted at the general hospital once a week for one hour. There is no follow-up by nurses in the homes. During six months in 1923, 62 expectant mothers were observed, which is a very small number as 1,576 total births were reported for the year. An increase in the percentage of births receiving organized pre-natal care may well be considered as a possible method of decreasing the high still-birth rate, which was 5.1 per 1,000 live-births, based on the number of live-births and still-births reported to the local registrar in 1923.

Three organizations conduct clinics for infants; they are the Lancaster General Hospital, the Community Service House, and the Iris Club. A physician is in attendance in each; follow-up service in the home by nurses is provided only by the first two. The Community Service and the Iris Club operate with state aid and the physicians and the nurse are furnished by the state. During 1923, approximately 500 infants were observed by the three clinics combined. A clinic for children of pre-school age is held at the general hospital.

The Board of Education is responsible for the supervision of the Health of the school child. Medical examination for physical defects is made annually by two part-time physicians, assisted by two full-time nurses. The heart and lungs are examined with a stethoscope only in special cases. Height and weight measurements are made by the nurses once a year. The accomplishment during the previous year in correction of defects could not be completely determined from the records available. The health teaching consists only of an organized course in hygiene, with practically no correlation between health education and other subjects in the curriculum.

SANITATION, FOOD AND MILK SUPPLY

Sanitary, food and milk inspections are made by the health officer. The inspections during 1923 consisted chiefly of investigation of 469 nuisance complaints, the collection of 178 milk samples, the inspection of 220 milk stores, 24 inspections of city markets, and 24 inspections of meat markets. It will be seen that the volume of work done in connection with the control of food supplies is rather meagre.

Figures showing the percentage of the milk supply obtained from tuberculin tested cows, and the percentage of milk pasteurized, could not be readily obtained. Certified milk is not available. The laboratory tests and bacteriological counts of milk supplies are made by the city chemist and bacteriologist. Monthly bacteria counts are made of each supply. Dairy inspection is made by the health officer; no score card is used.

VISITING NURSE ASSOCIATION

The Visiting Nurse Association is a private organization, consisting of eight nurses, who give general bedside care both free and for pay. All types of cases are handled, with the exception of communicable disease.

COMPARISON WITH OTHER CITIES

• The achievement of Lancaster in two of the major health activities places it among the upper 29 cities surveyed. In six activities it is grouped with the middle third of cities and in three among the lower third.

HEALTH SURVEY OF 86 CITIES

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		.....★
V. D. Control	O	.....	.....★
T. B. Control	O	.....	.....★
Pre-natal	P	.....	.....★
Infant	P	.....		.....★
Pre-school	P	.....	.....★
School	E★		
Sanitation	H★		
Laboratory	H	.....	.....★
Pop. Health Inst.	H	.....	.....★

¹See page 273.

The position of the city could be materially improved by an increased use of the facilities now existing.

LANSING, MICHIGAN

Surveyed, April 14-15, 1924

Lansing, the capital of Michigan, lies in a rich agricultural district in the central part of the state. The city is unusually clean and free from smoke and the residential district has a large number of shade trees.

Lansing was founded in 1837 and became the capital of the state in 1847. Of recent years growth has been steady. The population in 1920 was 57,327. About 10 per cent of the population are foreign born and about 1 per cent are negroes. The estimated population in 1923 was 65,871.

Probably 60 per cent of the industries in Lansing are concerned with the manufacture of automobiles and automobile parts and accessories. Among other products are cigars, cement blocks, tents and awnings and tools.

The State Agricultural College is located in East Lansing.

DEPARTMENT OF HEALTH

A board of health of 8 members, one from each ward of the city, is appointed by the mayor and approved by the council.

The present full-time health officer, appointed by the Board of Health, is a physician who has had a number of years experience as a county health officer and as epidemiologist with the State Board of Health. The Health Department staff includes three school nurses, three nurses doing infant welfare and generalized nursing, a city physician, a quarantine officer, three clerks, and a food inspector.

The appropriation for the Health Department for 1923 was \$42,222 or about 64 cents per capita.

Considerable time and emphasis is given to the control of communicable disease, but very few records of the number of cases or deaths could be found. Vaccination is not required before children may attend school, but the health officer has power to enforce vaccination in time of threatened epidemic and at one time in 1923 vaccinated 11,000 persons. An effort to interest the community in diphtheria immunization was made two years previous to the survey but at this time there was no activity along this line. The school nurses visit the schools each morning to inspect children whom the teachers refer to them as showing symptoms suspicious of communicable disease. If two cases of diphtheria are found in one classroom all children in that room are cultured.

The state laboratory does all laboratory work for the local Health Department.

The Health Department maintains a health center where ten different clinics are conducted as follows: venereal disease, eye, nose and throat, skin, child welfare, orthopedic, tuberculosis, psychopathic, pre-natal, and a miscellaneous clinic where most of the work was examination of food handlers. Attendance for 1923 varies from 43 in the pre-natal clinic to 1,758 in the venereal disease clinic. Several of the clinics are conducted by private physicians who give their services free, others by the city physician. Fifty-eight tuberculosis patients were taken care of in local hospitals during 1923.

About 80 per cent of the milk supply is pasteurized. All of the dairy and food inspection work is done by one man who also does sanitary inspections. The state laboratory does the laboratory examination of milk, making two or three examinations of each supply each month. During 1923, there were 2,184 food inspections and 6,075 sanitary inspections made.

The medical and nursing work in the schools is under the direction of the Health Department. School children are given an inspection once in two years by the health officer. In 1923 he examined 9,618 children. Complete records of physical defects found or their correction could not be obtained. Dental corrections for indigents are cared for in the health center, and an average of three tonsil and adenoid operations for school children are performed there weekly.

Only three schools are equipped with scales. Milk is available in the schools and there are four open-air classes. In connection with these a nutrition class is conducted by students from the agricultural college.

An extensive syllabus in health education has been worked out by the director of physical education and a special period of 20 minutes a week is devoted to it in the grade schools. Health projects have been promoted in the first and second grades and the effort has been made to correlate health teaching with other subjects in the curriculum.

PRIVATE AGENCIES

The county tuberculosis society employs one nurse who carries on publicity work and also does tuberculosis nursing for the county. Both the Y. M. C. A. and Y. W. C. A. are evincing a good deal of interest in health education.

COMPARISON WITH OTHER CITIES

For the majority of the 11 major activities, Lansing falls in with the middle group of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H★		
V. D. Control	H	.....	★
T. B. Control	H-P	.....	★
Pre-natal	H	.....	★
Infant	H★		
Pre-school	H	.....	★
School	H★		
Sanitation	H	.....	★
Laboratory	O	.....		★
Pop. Health Inst.	H	.....	★

¹ See page 273.

The child health program is handicapped by the limited extent of the infant welfare program and the absence of medical and nursing service in the schools.

LEXINGTON, KENTUCKY

Surveyed, February 18-23, 1924

Lexington was founded in 1779, incorporated as a town in 1782, and as a city in 1832. The population in 1920 was 41,534. The estimated population in 1923 was 43,673. Foreign-born constitute two per cent and negroes about 30 per cent.

Transylvania College, the oldest institution of learning west of the Alleghenies, was established in Lexington by an act of the Virginia Legislature in 1783. Lexington is also the site of the University of Kentucky and Sayre College for Women.

This city has long been known as the Heart of the Blue Grass Region. The principal crop is tobacco. Horse breeding and racing interest many. The two largest industries within Lexington are flour milling and oil refining. Other plants manufacture candy, cigars, bricks and mattresses.

DEPARTMENT OF HEALTH

The city is governed by a mayor and four commissioners. There is a Board of Health appointed by the mayor, which consists of five physicians, a lawyer and the mayor. The full-time health officer is a physician who was formerly superintendent of a Kentucky hospital for the insane. The Health Department staff includes three sanitary inspectors, one food inspector, one clerk, two bacteriologists, and two part-time physicians doing venereal disease clinic work. The appropriation for the Health Department, exclusive of garbage control, was \$26,475 in 1923. This is about 53 cents per capita.

One of the primary interests of the Health Department is an effort to lower the high death rate of the community (21.7 in 1923) by improvement of the housing situation. A special study was being made and special ordinances being prepared at the time of the survey. The city not only has large numbers of small alley houses, but three congested districts of small houses. There has also been some talk of requiring the pasteurization of all milk not certified, but apparently there is not yet an adequate demand for pasteurized milk. There is a difference of opinion as to the present amount of pasteurized milk, estimates varying from 18 to 75 per cent. It is believed that all the cattle supplying Lexington are tuberculin tested. Farm inspection and bacteriological examinations of milk are carried out by the Health Department. The one food inspector is also required to do all in-

spectations of food handling establishments, as well as collection of milk samples. The local dairymen's association is doing some educational work on the food value of milk.

Quarantine of communicable disease is carried out by sanitary inspectors. There is no nurse in the Health Department to do educational visiting to these cases. Reporting of communicable diseases seems to be fairly complete with the exception of tuberculosis where for several years the deaths have exceeded the cases reported. Routine tabulation of births and deaths is also done in the Health Department. Vaccination is required before children can attend school, but no records of the number of vaccinations done by the Health Department could be obtained. Nothing has been done in the way of promotion of diphtheria immunization. The Health Department laboratory is maintained in connection with a private group clinic, and has the benefit of supervision by one of the clinic physicians. The Health Department is also charged with the supervision of garbage collection.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs a part-time physician, a part-time health education specialist, two graduate nurses and a colored "practical nurse." All children are examined annually. Although all schools are equipped with scales, height and weight are determined only once a year and these records are not sent to parents. The nurses do follow-up work to obtain correction of physical defects. During 1923 notices of 2,348 physical defects were sent to parents and 987 defects were corrected. Milk is obtainable in the schools and an open-air class had an enrollment of 32 in 1923. Nutrition classes, with special feeding and rest, were conducted for 785 children in 1923. Many of the schools have hot noon lunches available for low cost. The Parent-Teachers Associations frequently help with these to lower the cost to the children. A rather extensive health education course was begun prior to the survey, by representatives of the home economics department of the State University. They conduct a class for teachers and each grade is visited every two weeks. Children are to be weighed at these visits. There is still opportunity for better coordination of health education with physical education.

The school physician also makes the physical examinations for children desiring working permits.

PRIVATE AGENCIES

Lexington has a large variety of private agencies, doing a great deal of work, and many of them are partly supported by city appropriation.

The Public Health Nursing Association, employing seven nurses, is conducting a large and varied program, beginning with maternity and pre-natal work, giving two weeks post-natal care, and then turning the babies

over to the Baby Milk Supply. They also do bedside nursing, tuberculosis nursing, follow-up on care of crippled children, and other miscellaneous public health nursing work. The Association provides milk for undernourished children in the public schools, and a ten weeks summer camp for undernourished or pre-tuberculous children. In 1923 there were 125 children in this camp, about 75 of them remaining for the entire ten weeks. The Association also maintains 22 clinics weekly covering the following field: eye, ear, nose and throat; dental; pre-natal; general medical; special children's medical; orthopedic; venereal disease; gynecological; and tuberculosis. The clinics were visited by 3,884 different persons in 1923. School children with physical defects are referred to these clinics for further examination. The county sanatorium cared for 134 tuberculosis cases during 1923.

The pre-natal clinic, in which there were 106 mothers registered in 1923, is attended largely by negroes. Plans are under way for a separate clinic for white expectant mothers. The still-birth rate for 1923 was 6.6.

The county, city and state combine in maintaining a venereal disease service. Attendance at this clinic in 1923 was 6,178.

The Baby Milk Supply started as an organization to provide modified milk for mothers who could not afford a pediatrician. The work has been supplanted by a wider advisory service with two full-time nurses and a clinic conducted by a physician. A large volume of work is done.

The Civic League is doing exceptionally good work in the promotion of playground activities, during eleven weeks in the summer, with additional community recreational projects during the spring and fall.

PUBLIC UTILITIES

The water supply is privately owned. The source of supply is from impounding reservoirs which are subject to pollution, and in spite of chemical precipitation, filtration and chlorination, colon bacilli are occasionally found in samples of the treated water.

The ordinance requiring connection with sewer when available is being enforced now, but prior to the survey not many more than 50 per cent of the homes were connected with sewers.

COMPARISON WITH OTHER CITIES

Lexington attains a rank in the upper third of cities in five of the eleven major activities.

The private agencies are more active than in the majority of the 86 cities and are apparently doing good work. It would seem worth while for the Health Department to consider the employment of a competent nurse to do instructive visiting for the better control of communicable disease. Additional provisions for dairy, milk, and food inspection work would aid in improving the quality of the milk supply. Further educational work on the value of pasteurized milk would also increase the protection of the city against possible outbreaks of milk-borne communicable disease.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....	★
V. D. Control	H	.....		★
T. B. Control	P	.....		★
Pre-natal	P	.....		★
Infant	P	.....		★
Pre-school	P	.....	★
School	E	.....	★
Sanitation	H★		
Laboratory	H	.....	★
Pop. Health Inst.	H	.....	★

¹See page 273.

LIMA, OHIO

Surveyed, January 28-February 2, 1924

Lima is located in northwest Ohio, on practically level ground, with one stream running diagonally through the city.

The population in 1920 was 41,326, and the estimated population in 1923 was 44,757. About 5 per cent of these are foreign born and 3 per cent negroes.

Railroad shops furnish employment to large numbers. Locomotive building, steel casting, oil refining, cigars, motor trucks and woolen blankets are the principal industries.

DEPARTMENT OF HEALTH

A recent change in the plan of city government has introduced a city manager, working with a mayor and commission. The Board of Health consists of the city manager and four others, one of whom must be a physician. The health officer is a physician who devotes part of his time to private practice and who maintains health department headquarters in his own offices. He is assisted by two sanitary inspectors, one food inspector, one clerk, and one nurse. The appropriation for the Health Department in 1923 was \$14,140, or about 32 cents per capita.

The clerk also acts as registrar of vital statistics and to some extent directs the work of the inspectors. Births are well reported and the ratio of cases of communicable diseases to deaths indicates good reporting, with the exception of tuberculosis. In 1923, for the first time in several years, the number of cases of tuberculosis reported was not less than the number of deaths reported. Spot maps of active cases of contagious diseases were seen in the Health Department office. Vaccination is required for attendance at school only if an epidemic exists. Free immunization against smallpox, diphtheria or typhoid fever is not offered by the Health Department and there were no records of any toxin-antitoxin administered. The nurse employed by the Health Department devotes her time to instructive visiting of communicable disease cases.

The milk, dairy and housing inspection work is done by a woman without technical training, but with many years of practical experience. About 49 per cent of the milk supply is pasteurized and it is believed that most of the cattle supplying milk are tuberculin tested. A record of 152 food

inspections during 1923 was found, but there were no figures available for the number of sanitary inspections for the year.

HEALTH OF THE SCHOOL CHILD

The Board of Health employs one nurse who attempts to give each child a physical inspection once a year and parents are urged to have their own physicians examine school children annually. No records could be obtained of the amount of this work, nor of defects found or corrected. All the schools are provided with scales and the teachers weigh the children once a month. Milk is available in the schools both morning and afternoon, but there are no nutrition or open-air classes for underweight or pre-tuberculous children. There is a prescribed course in health education but no supervisor for the work and the amount of correlation with other work varies with the interest of individual teachers.

OTHER AGENCIES

The State Board of Health conducts a tuberculosis clinic in Lima once a year. In 1923, the attendance was 64 and an attempt was made to keep in touch with those who came by a nursing visit once a month. Patients may be hospitalized in county or state sanatoria. The Junior Red Cross conducts a fresh air camp where 63 children received six weeks' care in 1923. Children for this camp are recommended by the Red Cross or the school nurse and are examined by the health officer. Many local organizations contributed support to this activity, which has a staff of six, including a nurse and a play supervisor.

The venereal disease clinic conducted by the state and city Health Departments jointly, gave over 2,000 treatments in 1923.

The Red Cross, with a budget of \$8,500 in 1923, employs three nurses for bedside nursing. A dental clinic is maintained by this organization and at the time of the survey they were considering establishing a clinic for infants and mothers. No infant welfare clinic exists in Lima. There is one pre-natal clinic a year and one pre-school clinic. Attendance at the pre-natal clinic was 35, and at the pre-school clinic was 50, in 1923.

The Child Welfare Association has conducted health activities in the city and county ever since the war. For three years they carried on extensive nutrition work in the public schools. Lunches were served to undernourished children, special instruction was given to them and there was some home follow-up. The Modern Health Crusade was carried on one year. The work was discontinued by the Child Welfare Association in 1923 and very little of it is being continued by the school authorities.

There are seventeen active licensed baby boarding homes, supervised by the Child Welfare Association.

COMPARISON WITH OTHER CITIES

Lima belongs to the middle third of cities in five of the 11 major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	H-O	.....		★
T. B. Control	O	.....	★
Pre-natal	P	.....		★
Infant	★		
Pre-school	P	.....	★
School	E★		
Sanitation	H★		
Laboratory	O★		
Pop. Health Inst.	H-P	.....	★

¹ See page 273.

It has no local laboratory facilities. There is no school physician and no infant welfare clinics.

Although some work is being done in the field of tuberculosis, pre-natal and pre-school welfare there is, by comparison with other cities, a decided lack of organized clinic service.

Lima's mistake in not providing and maintaining official health department quarters in some public building should be corrected.

LINCOLN, NEBRASKA

Surveyed, May 17-21, 1924

Lincoln is one of the most attractive residential cities in the middle West. It is the capitol of Nebraska and county seat of Lancaster County. Located in the southeastern part of the state, it is a flat, prairie city, skirted on one side by Salt Creek, a tributary of the Platte River. It is the geographic center of a rich, fertile agricultural territory, the major crops of which are wheat, corn and alfalfa. Although not essentially an industrial center, the manufactured output is increasing steadily. The principal activity is trading, both wholesale and retail. The State University and the State College of Agriculture, with a combined enrollment of nearly 9,000, are both within the city limits, and three denominational universities are located in the suburbs.

The salt springs attracted the first permanent settlers to the city in 1856, and played an important part in its development for the next thirty years. However, because of the high cost of extracting the salt, the industry has not been developed since 1886. The area of the city is 12.4 square miles. The population increased from 43,973 in 1910 to 54,948 in 1920, of which 13 per cent were foreign born. The population in 1923 is estimated at 58,761.

MUNICIPAL GOVERNMENT

Since May, 1913, Lincoln has been operating under the commission form of government. The city is divided into five departments, the superintendents of which are elected and constitute the city council. The mayor is one of the five councilmen and is also superintendent of the Department of Public Affairs. The other four departments are, Accounts and Finances, Streets and Public Improvements, Public Safety, and Public Property.

DEPARTMENT OF HEALTH

The Health Department is one of the divisions of the Department of Public Safety. The superintendent of the Department of Public Safety appoints the health officer, whose title is superintendent of health. The term of the health officer is two years. The present officer is a physician who has held this position for nine years. Prior to this appointment he was employed by the Chicago Department of Health. In addition, the Health Department includes a deputy superintendent, who is a physician assistant to the health officer, a quarantine officer, one dairy inspector, one meat and food inspector,

two sanitary inspectors, one tuberculosis nurse provided by the tuberculosis association, one maternity and child welfare nurse, one social welfare nurse, one venereal disease nurse, one stenographer and clerk. In addition to the foregoing, all of whom are full-time employees, there are part-time workers, including one laboratory worker, one physician spending 26 hours a week in the venereal disease clinic and one nurse devoting the same amount of time in this clinic. There are also several volunteer physicians. The maintenance of isolation hospitals is also a function of the Health Department. The budget provided for 1923, exclusive of hospitalization, was \$26,176, or 44 cents per capita.

The Health Department handles all but two of the eleven major health activities. The Department of Education is responsible for the medical supervision of school children and the water and light division of the Department of Public Property assumes control of the water supply. Of those activities for which the Health Department alone is responsible, the city rates conspicuously high in vital statistics and venereal disease control. Eight clinics a week are held for the treatment of venereal disease, with a physician and nurse in charge. During 1923, 405 cases were treated, of which 235 were new, and a total of 9,292 treatments were administered.

The Health Department provides little supervision of the health of the child until he reaches school age. There are no clinics for pre-natal, infant and pre-school age cases. The service which it renders consists chiefly of nursing visits by the child welfare nurse, who, alone, is unable to give a sufficiently extensive service. The problem is hardly being met, it would seem, with but 53 births receiving supervision, and with only 496 visits to infants, in a city of 1,435 live births.

HEALTH OF THE SCHOOL CHILD

In comparison with the other cities surveyed, Lincoln occupies a very favorable position in achievement in its care for the health of the school child. One of the factors contributing to its admirable accomplishment is the existence of a well organized Department of School Health, functioning under a sympathetic superintendent of education. The staff includes one full-time physician, who is the director, two part-time specialists, two physicians who are high school medical examiners, four school nurses, two dentists, one assistant to them, a nutrition worker and an anaesthetist. In addition to this staff, there is a nurse supplied by the county tuberculosis association. The health supervision includes a fairly complete physical examination annually of each child by the directing physician, assisted by one of the nurses and the part-time specialists, and a well planned individual lesson in health education to child and parent using the physical findings as a text. Attention is given to all heart and lung cases by specialists. Nose and throat cases may be operated upon by the school specialists in a special clinic provided in the junior high school. Of 10,810 children

examined by the dentists, 7,588 were found with dental defects, and 1,642 had their dental defects corrected in the school dental clinic.

Another outstanding contribution to the work of promoting the health of the school child is the course in health education, organized by the director of the School Health Department, assisted by the nurses. Health teaching in Lincoln seems to be many strides ahead of that done in other cities surveyed.

MILK SUPPLY

It is estimated that 90 per cent of the milk supply is derived from tuberculin tested cows, and only 75 per cent is pasteurized. The tests, including the bacteriological analyses, are made by the dairy inspector; until recently, monthly counts of the product of each distributor were made. The dangers inherent in the discontinuation of this method of control are evident. It would seem desirable to make the laboratory control a routine function of a trained technician in the laboratory.

COMPARISON WITH OTHER CITIES

As shown in the table below, in five activities Lincoln ranks among the highest third of the 86 cities surveyed, among the middle third in two other activities, and among the lower in four activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H★		
V. D. Control	H	.....		★
T. B. Control	H-P	.....	★
Pre-natal	H★		
Infant	H★		
Pre-school	★		
School	E-P	.....		★
Sanitation	H-O	.....	★
Laboratory	H	.....		★
Pop. Health Inst.	H-E	.....		★

¹ See page 273.

As has been pointed out in the previous discussion, Lincoln's low standing in pre-natal, infant and pre-school child care is largely due to the absence of clinics for these groups, to the apparently inadequate nursing service provided for the first two classes, and to the almost complete lack of nursing care for the pre-school child. It would seem that there is a great opportunity for one of the numerous volunteer agencies interested in the welfare of the community to demonstrate the value of this service by establishing such clinics, with provision for visits to the home by nurses. Such a service might be launched in cooperation with the Health Department, with the view to the eventual operation by this department as the official community health agency.

LITTLE ROCK, ARKANSAS

Surveyed, January 28—February 2, 1924

Little Rock, the capital and largest city of Arkansas, lies on the south bank of the Arkansas River, in the geographical center of the state. The population in 1920 was 65,142. Twenty-seven per cent were negroes and 3 per cent foreign born. The estimated population in 1923 was 70,916.

Little Rock is adjoined by rich cotton growing river bottoms, and the city's largest manufacturing plants are those engaged in making cotton seed oil and corn products. Other industries include railroad shops, various wood products and mill machinery. Unusually fine railroad facilities add to the importance of Little Rock as an industrial center.

Residences are largely of the one-family type, many of them being owned by the occupants.

DEPARTMENT OF HEALTH

City government is managed by a mayor and four commissioners, the mayor serving as commissioner of Health and Charities. The full-time health officer is appointed by the mayor and all other appointments to the health staff are made by the mayor on the recommendation of the health officer. The present health officer is a physician, experienced in public health work.

There is also a Board of Health, appointed by the mayor, consisting of five members, two of whom must be physicians.

No Health Department budget is prepared in advance of the annual appropriation and the amount granted has been a little less each year for several years. In 1923 the appropriation was \$17,908.15, or about 25 cents per capita.

The Health Department staff includes in addition to the health officer, a physician, three school nurses (financed by the Board of Education but employed and directed by the health officer), a clerk, three sanitary inspectors, and three food inspectors, all full-time employees.

In spite of financial handicap and a rather small staff, the Health Department seems to be achieving results as indicated by the decline in death rates for the last few years.

The Health Department has obtained the cooperation of other agencies in most of its clinics. Through an agreement with the University of Arkansas, various health clinics, including a venereal disease clinic, are conducted in the city dispensary building.

The County Tuberculosis Association maintains a weekly tuberculosis clinic in the same building, with three part-time physicians in attendance at the clinic, and with two full-time nurses for the clinic and home visiting. In 1923 the attendance at the clinic was 2,926 and the nurses made 4,264 home visits.

A child welfare clinic is also operated at the city dispensary building, fostered and financed by the Junior League. Physicians are in attendance at this clinic 12 hours a week and nurses, 24 hours. The organization had been in existence eight months at the time of the survey and 250 children under five years of age had been observed. Home instruction visits to the number of 720 had been made by the nurses. No pre-natal clinics had yet been established. However, the per cent of births in hospitals has increased from less than 12 in 1921 to more than 23 in 1923. During this same interval the per cent of births attended by midwives has somewhat decreased.

Communicable diseases are evidently well reported in Little Rock, as the ratio of cases to deaths is high. Spot maps of certain communicable diseases are kept in the Health Department and a specialist is available for consultant work. Smallpox vaccination is required before children may attend school. During 1923, 311 persons were vaccinated at the Health Department. Since November 1922, the Health Department has been making every effort to educate the citizens to the value of immunization against diphtheria, but it was not possible to obtain any record of the number of children given toxin-antitoxin.

HEALTH OF THE SCHOOL CHILD

The physical inspection of all school children is done annually by the nurses and during the school year 1922-23, 3,967 children were reached. Defects were found to the number following:

Enlarged gland and faulty nutrition.....	719
Vision	550
Hearing	104
Teeth	1,458
Tonsils	1,021

Corrections obtained were as follows:

Glands	36
Vision	18
Hearing	3
Teeth	80
Tonsils	53

A dental clinic with dentist and dental hygienist in attendance has been begun quite recently.

All children are weighed and measured once a month. Milk is available in the schools, but there are no open-air classes for underweight children.

A health education course is in effect from the third to sixth grades, inclusive, and there is very evident throughout the entire school system a desire to teach health. The health crusade is carried on in some schools, while others are developing their own programs. Each school has what is known as a School Improvement Association, corresponding somewhat to what is usually known as a Parent-Teachers Association.

The best of these groups in Little Rock has supplied its school with playground equipment, food for the undernourished, clothing for the needy, home visiting by a committee of mothers, and a cafeteria managed by committees of mothers with one paid helper.

There is not a great deal of child labor, but no physical examinations are required of those applying for working papers.

COMPARISON WITH OTHER CITIES

The table below, giving the relative position of Little Rock with regard to the 11 major activities, shows a rather even division between the upper, the middle, and the lower third of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....		★
Com. Dis. Control	H ^o	.....		★
V. D. Control	H-O	.....	★
T. B. Control	H-P	.....		★
Pre-natal	★		
Infant	P★		
Pre-school	P	.....	★
School	H-E★		
Sanitation	H★		
Laboratory	O	.....		★
Pop. Health Inst.	H	.....	★

¹See page 273.

Pre-natal work has hardly been begun, and there is as yet no physician on the school medical staff. On the other hand, there is, on the part of the school system, a very encouraging vision of what health education may mean.

There is a spirit of cooperation between private agencies and the Department of Health. The appointment of a public health nurse on the Health Department staff is desirable. Public health work in Little Rock is deserving of more financial support.

MACON, GEORGIA

Surveyed, March 31—April 5, 1924

Macon is located in the center of Georgia on a group of hills overlooking the Ocmulgee River. It is a fairly important concentration point for cotton and is also the center of an important peach region. Three railroads maintain repair shops in Macon. Among many other industries are included textile, brick, lumber, engine, fertilizer and furniture manufactories. There are five colleges and academies in Macon. Many of the public school buildings are quite new.

The population in 1920 was 52,995, of which 44 per cent were negroes. The estimated population in 1923 was 56,331.

DEPARTMENT OF HEALTH

The Board of Health consists of the chairman of the finance commission, the health commissioner, the superintendent of schools, chairman of the Board of County Commissioners and two physicians appointed by the county Medical Society. The health officer, appointed by this Board, devotes about 90 per cent of his time to Macon and the remainder to the county. The present health officer, a competent medical man, is given a free hand in his choice of personnel and in his department policy. In addition to the city and county Health Department work, he has also been appointed chief of the out-patient department of the large municipal hospital and has all of its clinics under his supervision.

The Health Department staff includes two nurses, three laboratory workers, five sanitary inspectors, and three food and dairy inspectors. There is also one colored nurse, paid by Sheppard-Towner funds, who does school work and maternal and infant welfare work. At the time of the survey the school medical inspection was in process of being transferred from the Board of Education to the Board of Health. With all the public health nursing service of the city centered in one department the probability is that the work will be better coordinated and the health officer will be better able to determine what additional nursing staff is needed for a complete program. The duties of the Health Department include control of communicable disease, food and milk inspection, inspection of sanitation and plumbing, laboratory work, vital statistics, and the municipal clinics.

The department is active in vaccination against smallpox and has begun to interest people in diphtheria immunization.

There are clinics for tuberculosis, venereal disease, mental cases, pre-natal, infant, and pre-school welfare. The venereal disease clinic, which is exceptionally well organized, had by far the largest attendance of these. The maternal and infant welfare clinics are well organized and fairly well attended. The home visiting in connection with these clinics is done by social workers instead of by nurses. According to the records the infant mortality rate in Macon was 157 in 1923, and there were 89 still-births to 1,213 live-births. Obviously there is still plenty of work for the infant welfare service.

Dairy inspection and laboratory control of the milk supply are conscientiously carried out, but only about 10 per cent of the supply is pasteurized and there is always the danger that a raw milk supply may become the carrier of disease germs. An epidemic of septic sore throat in Macon in recent years was traceable to the milk supply.

HEALTH OF THE SCHOOL CHILD

The school health inspection staff consists of a part-time physician, a full-time white nurse, a part-time colored nurse, and a full-time dental hygienist. The greater part of the inspection work is done by the nurses, who refer those children who, in their opinion, need further care, to the school physician or the municipal clinics.

Children are weighed once a month and their weights reported on cards to their parents. Milk is sold at cost in most of the schools and there is one open-air school for pre-tuberculous children.

All teachers give some health talks to the children and in the seventh grade there is a course outlined by the state Health Department.

The school playgrounds are unusually large and well-equipped with apparatus. Each playground has a play leader.

PRIVATE AGENCIES

The principal private organization doing health work is the Macon Child Welfare Council. It maintains two clinics in different sections of the city with certain afternoons for pre-natal work and others for infants and larger children. One paid physician supervises the work and he is assisted by two volunteer physicians and a paid social worker who does the follow-up visiting. A mental clinic for children had just been inaugurated at the time of the survey.

The Anti-Tuberculosis Association is interested in the open-air school, which is run by the School Board. This school is supported jointly by the two groups. There are at present no hospital facilities for tuberculosis cases.

The Parent-Teachers Association has been very active, having inaugurated the movement which resulted in school medical inspection and the open-air school.

TYPHOID FEVER, MALARIA, AND DENGUE

A special effort was made by the Health Department during 1923 to close many open wells, and encourage the extension of the city water system and city sewerage system. In 1922 there were 95 cases of typhoid fever and 19 deaths. In 1923 there were 35 cases and 8 deaths.

There has been a corresponding decrease in malaria. In the fall of 1922 there was a large outbreak of dengue fever, which affected almost 50 per cent of the population. This created an interest in mosquito extermination and in 1923 the Health Department was granted an appropriation of \$1,500 for this work. A survey was made to determine breeding places, an educational campaign is in progress, and the health officer is optimistic that malaria will soon be greatly reduced.

COMPARISON WITH OTHER CITIES

The accompanying chart shows that Macon achieves a place with the upper group of cities in five of the major health activities, and is among the lower third in three.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....		★
T. B. Control	H-P★		
Pre-natal	H-P	.....	★
Infant	H-P★		
Pre-school	H-P	.....		★
School	E★		
Sanitation	H	.....	★
Laboratory	H	.....	★
Pop. Health Inst.	H-E	.....		★

¹ See page 273.

Attendance at the tuberculosis clinic might be greatly increased by proper promotion and the provision for hospitalization would be of great help in the tuberculosis control program.

It is unusual to find such a small proportion of the milk supply pasteurized. This fact stands out as a weak spot in the public health program of Macon.

It seems likely that the centralization of all the nursing work in the Health Department and the addition of several nurses to the staff would greatly improve all the clinic work, particularly the infant welfare work which has at present only the services of social workers for home visiting. A full-time school physician would make it possible to give more detailed attention to the physical examination of school children.

MALDEN, MASSACHUSETTS

Surveyed, April 9-14, 1924

Malden is located on the northern edge of the city of Boston, only a few miles from the ocean. It has a total area of 4.8 square miles, and in certain sections is quite hilly. In 1920, there were living in this area 49,103 persons and the estimated population in 1923 was 50,797. About 28.7 per cent were foreign born and 1.1 per cent, negroes.

Many residents of Malden work in Boston. The principal industries in Malden are the manufacture of rubber shoes and boots, tires and hose, and there are also several knitting mills. Smaller industries include printing, and the manufacture of paints, drugs and chemicals, skates and shoes.

Both water and sewerage systems are part of the large service which supplies the metropolitan district of Boston.

DEPARTMENT OF HEALTH

City affairs are administered by a mayor and board of aldermen. The Board of Health, appointed by them consists of three members appointed for three years, the term of only one expiring each year. The agent of the Health Department has the official title of chauffeur and inspector of health, the services of a chauffeur being necessary for the ambulance of the municipal contagious disease hospital. Other members of the Health Department staff are an assistant to the agent, who is classed as a laborer, a clerk, a part time physician, who acts as laboratory diagnostician and physician for the contagious disease hospital, a part-time milk inspector, who is employed elsewhere during the day time and collects samples of milk and makes analyses at night, a tuberculosis nurse, an infant welfare nurse, and a part-time dentist who holds two clinics a week at the Health Center. At the contagious disease hospital are employed a graduate nurse as director, six female attendants trained by her, a laundress, a cook, and two janitors. The appropriation for the Health Department and the hospital in 1923 was \$33,895, or about 66 cents per capita. About \$20,000 of this was for the maintenance of the hospital.

The contagious disease hospital handles all types of communicable disease and receives nearly half its patients from adjacent towns. This fact somewhat confuses the vital statistics in Malden and makes it difficult to compute communicable disease death rates exactly. Isolation of cases in the hospital might perhaps receive a little stricter enforcement. A child of one

of the employees, who had not been immunized against diphtheria, was found in the hospital kitchen at the time of the survey. Equipment for sterilizing dishes also seemed inadequate.

Vaccination of school children is required by state law. There are, however, no records of any vaccinations being done by the Health Department, although smallpox and typhoid vaccine are kept there for free distribution. The children of one parochial school were Schick tested and toxin-antitoxin was given to 1,175.

About 85 per cent of the milk supply is pasteurized, but not all the pasteurizing vats are equipped with recording thermometers. Seventy-eight per cent of the cattle are tuberculin tested, but dairy farm inspection is not maintained. Fortunately a portion of the supply is the same as that sold in Boston, where it receives more complete supervision. The laboratory examinations of milk samples, as mentioned before, are done by a part-time employee working evenings. The assistant health inspector, who was appointed six months previous to the survey had made 260 food inspections and 73 sanitary inspections during that time.

No venereal disease service exists in the city. A city tuberculosis dispensary is maintained at the Health Center, with two clinics a week. During 1923, there were 204 persons examined at the clinic and 1,798 home visits were made by the nurse. There are no beds available locally for the hospitalization of tuberculosis but cases of the disease are sent to the state sanatoria.

No pre-natal work existed up to the time of the survey, but it was understood that the Health Department was at that time contemplating the establishment of such a service.

Infant welfare clinics are held two afternoons a week at the Health Center. During 1923, there were 425 children under two years of age observed at the clinic and 2,903 home visits were made. Physicians at the Health Center are paid for each clinic they attend.

A dental clinic is also maintained at the Health Center for children under fourteen, with a charge of 15 cents for each visit.

HEALTH OF THE SCHOOL CHILD

For work in the schools the Board of Education employs two part-time physicians, four full-time nurses and one full-time health instructor. Children in the first grade are given a physical examination by a physician and each year thereafter by a nurse. Special cases and children 10 per cent or more underweight are referred back to the physicians for re-examination. In five of the 17 schools, children are weighed monthly, and in the remainder once a year. Children 10 per cent or more underweight are weighed monthly in all schools. Records of the number of defects found or corrections made could not be obtained. A good deal of time is spent by the nurses in taking children to and from hospitals and dispensaries in Boston. Milk is available

in the schools, but there are no open-air classes for underweight or pre-tuberculous children. A special health teacher is conducting work in three schools under a cooperative arrangement with the Department of Biology and Public Health of the Massachusetts Institute of Technology. This work is done during a special period, and some effort at correlation with other subjects is made by the regular classroom teacher. The school nurses conduct Red Cross classes in the ninth grade for about 100 pupils.

PRIVATE AGENCIES

The Women's Public Health Club, a private organization that had been instrumental in starting the infant welfare clinic, now conducted by the Health Department, was just organizing a clinic for pre-school age children at the time of the survey.

The Malden Children's Health Camp Association is conducted for mal-nourished children from 6 to 12 years of age. It is supported by the Malden Anti-Tuberculosis Society and private contributions.

The Malden Industrial Aid Association employs two nurses who do most of the bedside nursing for the city. A good day nursery caring for about 34 children daily is also operated by this association.

COMPARISON WITH OTHER CITIES

Malden achieves a place in the upper third of cities in five of the 11 major activities, but is entirely lacking in venereal disease and pre-natal service, and was only organizing pre-school work at the time of the survey.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	★		
T. B. Control	H	.....		★
Pre-natal		.....	★
Infant	H	.....		★
Pre-school	P	.....	★
School	E	.....		★
Sanitation	H	.....	★
Laboratory	H★		
Pop. Health Inst.	★		

¹ See page 273.

The city is showing a progressive attitude in its health education program in the schools. Full-time and trained personnel throughout the health service are Malden's chief needs.

McKEESPORT, PENNSYLVANIA

Surveyed, March 22-24, 1924

McKeesport lies at the junction of the Monongahela and the Youghiogheny Rivers, 14 miles southeast of Pittsburgh. Bituminous coal and natural gas abound in the vicinity and iron, steel and tinplate are extensively manufactured in the city. The tinplate plant is one of the most important in the United States.

McKeesport covers about 5 square miles, with the industrial section located along the rivers, at the base of a high hill, on which the city is built. The first white settlement was made in 1769, but the growth was slow until 1830, when coal was discovered; the city was chartered in 1890. The population in 1920, according to the federal census, was 46,781, of which 25 per cent were foreign born. The estimated population in 1923 was 48,255.

DEPARTMENT OF HEALTH

The health officer is appointed by the mayor, while other personnel of the Health Department are appointed by the city council, which consists of four members. The present health officer was formerly sanitary inspector in the Department. The Health Department includes, in addition to the full-time health officer, a plumbing inspector, a milk and meat inspector, two sanitary inspectors called assistant health officers, a clerk, an attendant at the isolation hospital, and a bacteriologist and pathologist, who is also pathologist at the McKeesport hospital.

The budget of the Health Department for 1924, exclusive of the salary of the smallpox hospital attendant, was \$13,554, or 28 cents per capita.

The limited activities of the Health Department include plumbing, and nuisance inspection, food, milk and water control, communicable disease control, and the laboratory work connected with the foregoing functions.

Cases of communicable disease are reported to the Health Department, and the sanitary inspectors placard, give instructions and disinfect. Free immunization is not readily available against smallpox, diphtheria or typhoid and no decided effort, it seems, has been made to promote the use of toxin-antitoxin.

The number of inspections of food handling establishments made during 1923 was large, there having been about 5,000; no figures are available showing the number of other sanitary inspections. Dairy inspections are made,

but no score card is used in this connection. The practice of making bacteriological examinations of milk samples was begun only recently. Some progress has been made in improving the quality of the milk supply in the short period during which this technical control has been exercised.

CHILD WELFARE

A well-baby clinic, which is also open to children of pre-school age, is conducted at the McKeesport Hospital by the free milk and ice fund, a private organization. A physician is in attendance and a nurse, who also makes follow-up visits in connection with this service. The number of children in the clinic is small—only about 200 infants under one year of age. The nurse made 1,020 home visits during 1923.

There is no organized maternity welfare service; it is estimated that between 50 and 60 per cent of all births are attended by midwives, who are registered by the state, but over whom no supervision is exercised. The stillbirth rate for 1923, based on the number of births and stillbirths recorded, was 5.2 per 100 live births. This comparatively high rate indicates the necessity for greater attention to the care of the expectant mother.

HEALTH OF THE SCHOOL CHILD

The medical examination of school children is supervised by the Board of Education, and is conducted by a part-time physician, assisted by two full-time nurses. An examination of each child annually is required, and in 1923 there were 8,665 children at the rate of about 30 an hour. Dental inspection is included in the annual examination made by the physician. Largely through the efforts of the local dental society and the Kiwanis Club, a dental hygienist will probably be employed in the schools in the near future.

Children are weighed and measured each month, and the classroom weight record is maintained and posted conspicuously. There are no organized nutrition classes and apparently no special attention is given to underweight children, except that there is no charge to them for mid-session milk which is served. The health education course is started in the first grade, and the outline prepared by the state is used. There is an organized Health Crusade, with an enrollment of approximately 3,000 children.

COMPARISON WITH OTHER CITIES

McKeesport falls among cities in the lower third in seven of the 11 major health activities, and among those in the middle third in the four other activities.

Reorganization of all the city's health work under trained direction is the first step toward improvement of the city's standing.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O★		
T. B. Control	O★		
Pre-natal	★		
Infant	P★		
Pre-school	P★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H★		

¹ See page 273.

MOBILE, ALABAMA

Surveyed, April 14-19, 1924

Mobile is located in the southwest part of Alabama at the mouth of the Mobile River, which empties into Mobile Bay, an arm of the Gulf of Mexico. The region is low and flat, and the climate semi-tropical. The city was first discovered by the Spanish, and was settled by the French in 1702. It was the capital of the French province of Louisiana. It has also been British territory, and became part of the United States in 1813.

The city is about 18 square miles in area; there is practically a continuous series of wharves and piers almost $2\frac{1}{2}$ miles in extent. The city is served by six railroads, by steamship lines to ports in Europe, Central America, Cuba, and South America, and by river boats which navigate on an extensive inland waterway of rivers in Alabama, Mississippi and Georgia.

Lumber is the leading article exported. Other important exports are iron and steel products, largely from the Birmingham region, flour, cotton, corn, coal, timber and timber products. Tropical fruits, especially bananas, are the chief foreign imports. Articles manufactured in the city include floor tiles, textiles, lumber and timber products and fertilizer. The city is the center of a seafood canning industry, and fruit and vegetable canning are of increasing importance.

The population in 1920 was 60,777, of which 39 per cent were negroes. The estimated population in 1923 was 63,858.

DEPARTMENT OF HEALTH

The municipal administration consists of a board of commissioners, three in number, one of whom is the mayor and president of the board. The supervision of the various city departments is divided among the three commissioners.

The present Board of Health consists of six members, including the commissioner and five physicians. The health officer is appointed by the Board of Health for a term of five years. This position has been held for six years by the present health officer, a physician with keen interest and enthusiasm for his work. He is also county health officer. Other members of the Health Department include one full-time physician who devotes most of his time to communicable disease, one full-time inspector for placarding and terminal disinfection, three sanitary inspectors, one superintendent and inspector for malaria control, two milk inspectors, two veterinarians who are

meat inspectors, one full-time physician who is clerk and registrar of vital statistics, a Sheppard-Towner nurse for maternity and infant welfare work, and a stenographer. The laboratory, which is partly supported by the state, has a staff of one trained director, two technicians, and one helper. School medical supervision in both city and county is carried out by the health officer and three full-time nurses working under his direction.

The appropriation of the Department of Health in 1923 was \$16,000. In addition, appropriations of \$6,000 and \$4,000 were made to it by the city and county, respectively, for malaria control. The work done in this connection has been of such extent and character as to attract widespread attention.

At the city hospital there is an out-patient department which maintains clinics for maternity and child cases, venereal disease (a state clinic), dental, and general and surgical cases. There is no division between the pre-natal, infant, pre-school and school child cases; all attend the same clinic, and it was difficult to determine the attendance for each group. The work of the Sheppard-Towner nurse is closely coordinated with this clinic, and follow-up work is done by her. During 1923, approximately 279 pre-natal, 973 infant, and 150 pre-school visits were made. These figures indicate that the proportion of expectant mothers and infants in the city being reached by this service is not large, and that the provision of one nurse for this work is probably inadequate.

The clinic for venereal disease does a large volume of work. The total number of visits in 1923 was 18,516, and there were 251 new cases during the year.

There is no clinical service provided for tuberculosis cases except that at the general medical clinic of the city hospital. Hospitalization of tuberculosis cases is available at a camp maintained by the local tuberculosis association. The hospital is a few miles outside the city, and provides 20 beds. During 1923 there were 49 patients admitted. Such preventive measures as open-air classes and preventoria for undernourished and pre-tuberculous children are not provided. For several years, the number of deaths reported from this disease has greatly exceeded the number of cases reported.

Vital statistics, which are in charge of a physician, are well kept; information is readily available and up-to-date. The annual report contains numerous classifications of the data for the year.

Communicable disease cases in both city and county receive the personal attention of the health officer or of the physician assisting him. In cases of typhoid, contacts are routinely immunized. There are spot maps of communicable diseases, a chronological file, and a weekly chart of cases. The benefits of immunization against smallpox, typhoid and diphtheria are pointed out in the annual report of the Health Department, and an effort is made to encourage the practice. During 1923, there were 360 vaccinations, and about 120 diphtheria immunizations.

Other methods used for popular health instruction include Health Department reports; newspaper publicity; distribution of health literature published by the State Board of Health, the Children's Bureau, and the United States Public Health Service; and moving pictures, made possible by a portable projection machine in the Health Department. The library is not used as a medium of health education; it is a small institution with practically no health literature.

A large volume of work was done by the sanitary inspectors in 1923, when there were 15,597 inspections made. The food and milk inspectors made 2,476 inspections of food handling establishments exclusive of dairies.

Recently, as a result of aid from the State Board of Health and the United States Public Health Service, a model milk ordinance was adopted.

The laboratory furnishes the usual diagnostic service, and provides reliable control of the milk supply and the public water supply which is universally used. About 90 per cent of the dwellings are connected with the sewers, which empty untreated into the river and bay.

HEALTH OF THE SCHOOL CHILD

Physical inspection of each school child is made once every two or three years by the three school nurses of the Health Department, and children with suspected defects are examined by the health officer. The staff performs this service for the entire county, but the lack of transportation facilities impedes this work. The nurses are responsible for the following up of defects. During the year 1922-1923, all pupils in the first, third and sixth grades, 4,756 in number, were inspected for physical defects. Some of the results in correction of defects were 388 tonsil or adenoid operations, 74 vision corrections with glasses, and 1,042 teeth filled. There were also 615 children treated for hookworm at the clinics held in the county.

Children are weighed and measured twice a year by the nurses. There are nutrition classes for those who are underweight, and the Parent-Teachers Association assists in this work.

PUBLIC HEALTH NURSING

In addition to the nurses in the Health Department, there is one visiting nurse maintained by the Red Cross for generalized bedside nursing. The Metropolitan Life Insurance Company employs a general bedside nurse who is available to the general public for a small fee.

COMPARISON WITH OTHER CITIES AND CONCLUSIONS

Mobile ranks among the upper 29 cities surveyed in four of the eleven major health activities, among the middle cities in six other activities, and falls below the middle group in one activity, tuberculosis control.

The comparatively low position of the city in tuberculosis control work would be materially improved by the establishment of a tuberculosis clinic in the out-patient department of the hospital. Hospitalization facilities, furnished by a private agency seem to be adequate, and are apparently the phase of work receiving greatest emphasis.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H ¹	.....	★
V. D. Control	O	.....		★
T. B. Control	O-P★		
Pre-natal	H-O	.....	★
Infant	H-O	.....	★
Pre-school	H-O	.....	★
School	H	.....	★
Sanitation	H	.....	★
Laboratory	H-O	.....		★
Pop. Health Inst.	H-O	.....		★

¹See page 273.

Some of the factors contributing to the middle position in the majority of health activities in the community have been indicated. An increase in the nursing staff of the Health Department, for both maternity and infant welfare work, and school medical inspection would raise the standing of these activities.

MONTGOMERY, ALABAMA

Surveyed, April 7-18, 1924

Montgomery lies on the Alabama River in a rolling country east of the central part of Alabama. The state capital, located in Montgomery, is the building in which Jefferson Davis first took his oath of office as President of the Confederacy.

The Women's College of Alabama, which has been endowed by the General Education Board, is the outstanding educational institution in the city.

The population in 1920 was 43,464; 46 per cent of these were negroes and 2 per cent foreign born. The estimated population in 1923 was 45,383. One- and two-family houses predominate.

Montgomery lies in the center of a rich agricultural district, where sweet potatoes, peanuts, beans, cotton, corn and oats are raised. Industries in Montgomery include besides agricultural products, textiles, railroad repair shops, commercial fertilizer, lumber products, brick and tile.

The water supply, obtained from deep wells, is good and under the close supervision of the very competent sanitary engineering division of the State Health Department.

DEPARTMENT OF HEALTH

The health officer has jurisdiction over Montgomery and the county in which it is located. He is appointed by the County Board of Health, subject to approval by the state health officer. The present incumbent is a physician who has been in office for several years. He is supported by a staff including five nurses, a school physician, a bacteriologist, five sanitary inspectors, three meat inspectors, one milk inspector and one food inspector. The appropriation for the Health Department was \$28,139.06 in 1923, or about 62 cents per capita. In addition to the above staff the state supplies a dairy inspector who gives the greater portion of his time to Montgomery, and maintains a venereal disease clinic in cooperation with the United States Public Health Service, furnishing a part-time physician and a part-time nurse.

In addition to the local dairy inspector and the state dairy inspector, the United States Public Health Service has also furnished a milk inspection expert for some time. Milk regulations are rapidly becoming well established, although the per cent of milk pasteurized is still very small. The number of

food and meat inspections is unusually large, 25,508 having been made in 1923. There were also 79,025 inspections in 1923 by the five sanitary inspectors.

The usual routine control of communicable disease by quarantine and placarding is observed. The health officer himself usually attends to the instruction in cases of communicable disease. The ratio of cases to deaths in reportable diseases in Montgomery would indicate rather complete reporting, with the exception of tuberculosis, where for several years the number of deaths has exceeded the number of cases reported.

Children must be vaccinated before they may attend school. More than 4,000 persons were vaccinated during 1923. Nothing has been done so far to promote immunization against diphtheria.

There is no municipal hospital and no clinics except the venereal disease clinic conducted by the state, where 4,001 treatments were given during 1923.

The local Anti-Tuberculosis Association maintains a good small hospital and fresh air camp just outside the city. There are 32 beds available for tuberculosis patients and 48 were cared for in 1923.

One nurse financed by Sheppard-Towner funds and working quite independently, does all the public health work being done for pre-natal and infant welfare in the city and gives some of her time to the county. She made 324 pre-natal calls and 800 infant welfare calls in 1923. About one third of the births are attended by midwives. In 1923 there were 944 live births and 73 still-births. About 20 per cent of the births are in hospitals.

HEALTH OF THE SCHOOL CHILD

School medical inspection work is conducted by a full-time physician and three nurses from the Health Department staff. Physical inspections of children are made by the nurses at irregular intervals, only those needing special care being referred to the school physician. The surveyor was unable to obtain records of defects found or corrected. The one colored nurse apparently carries on her work quite unassisted by the physician. During 1923, 2,627 children were inspected, or about 37 per cent of the grade school population.

All but two of the white schools are equipped with scales. There are none in the colored schools. Children are weighed and measured at least once a year in all schools, and as often as once a month in a few. There are no open-air classes. Milk is available in the schools for those who wish it. There is no organized health education course in the schools, the quantity and quality of the instruction given depending entirely on the efforts of individual teachers.

The condition of school buildings at the time of the survey was good with the exception of two colored schools, where sanitary conditions were very bad.

The amount of child labor appears to be fairly large, particularly in

cotton mills. No physical examinations are required for obtaining working papers.

PRIVATE AGENCIES

The Anti-Tuberculosis Association, before mentioned, is the only private agency doing much health work. The Federation of Women's Clubs is interested in health work but has no definite program. Two of the men's clubs offer some support to playgrounds and a boys' summer camp.

COMPARISON WITH OTHER CITIES

It is apparent from the table below and the foregoing statements that there are several large gaps in the health program of Montgomery. In comparison with the other cities, Montgomery is among the upper third in two of eleven major health activities, in the middle third in five and with the lower third in four.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	O	.....		.....★
T. B. Control	P★		
Pre-natal	H★		
Infant	H	.....	.....★
Pre-school	H	.....		.....★
School	H★		
Sanitation	H★		
Laboratory	H	.....	.....★
Pop. Health Inst.	H	.....	.....★

¹See page 273.

It would seem desirable that the nursing staff for pre-natal, child welfare and tuberculosis work should be increased and that this field nursing work should be supplemented with thoroughly organized clinics. Some form of records of physical examinations and correction of defects would make it possible to decide how much is actually being accomplished by the present scheme of school medical inspection work. The obvious next step in the excellent milk control program is a campaign for an increase in pasteurization.

MOUNT VERNON, NEW YORK

Surveyed, April 14-19, 1924

Mount Vernon is one of a chain of cities and villages adjoining New York City on the north. The population in 1920 was 42,726 and the estimated population in 1923 was 46,982. About 24 per cent of these were foreign born and about 3 per cent negroes. The city covers $4\frac{1}{4}$ square miles and is essentially a residence city for people employed in New York City. One-family houses and modern apartments predominate. What industry is present is devoted to the production of women's lighter and finer garments, soap, dyes, optical lenses and electrical devices.

DEPARTMENT OF HEALTH

There is no board of health. The part-time health officer is appointed by the mayor for an indefinite term. The present health officer is a physician who gives part of his time to the Health Department and the remainder to private practice. He is assisted by two part-time physicians, a part-time bacteriologist and a part-time chemist, a registrar of vital statistics, a clerk, three nurses, and two inspectors. Salaries for the department amount to about \$18,000, and the entire appropriation for 1923 was \$21,725, or about 46 cents per capita.

The Health Department of Mount Vernon is noteworthy for its progressiveness in the matter of records. There are excellent charts and spot maps dealing with births, deaths, infant deaths and cases of communicable disease. The information is up-to-date and charts for the previous year are available for comparison. As nearly as could be ascertained, all births were reported to the Health Department.

Two things are of interest in the routine handling of communicable disease. All cases reported by physicians are acknowledged by a postal card, and notices are sent daily to all schools, libraries, dairies and the State Department, of all cases of communicable disease reported during the previous 24 hours, together with recoveries. About 1,800 children in the community had been immunized against diphtheria previous to the survey, in clinics conducted by the Department of Health in cooperation with the Department of Education.

In April, 1924, a pre-natal clinic was established by the Health Department. Previous to that time the pre-natal service had consisted entirely of a field nursing service. There were 250 expectant mothers registered with this service in 1923.

The infant welfare activities are centered about a clinic service of four hours a week. During 1923, 278 cases were observed at the clinics, with a clinic attendance of 2,416. The home visits for this service were 2,059 for that year.

Mount Vernon has had a rather low infant mortality rate for several years.

In the tuberculosis clinics only 103 cases registered for 1923. Undoubtedly this does not represent all the tuberculosis cases in the community.

There is no organized venereal disease service.

All the milk supply is either pasteurized or certified, but about 4 per cent is sold as loose or dipped milk in the streets. Laboratory service is maintained by contract with a private laboratory. The number of laboratory examinations of various kinds made is small for a city the size of Mount Vernon.

HEALTH OF THE SCHOOL CHILD

The school medical inspection staff employed by the Department of Education consists of three part-time physicians, five nurses, a part-time dentist and a dental hygienist.

Each school has a special room for the use of the health service. About four minutes are devoted to the physical examination of each child, all children are examined once a year.

All children are weighed twice a year, underweight children once a month, and the special nutrition class once a week. Milk is served in the schools for those who wish it, and there are four nutrition classes with an enrollment of 72 pupils.

The nurses are known as health teachers and, in addition to doing the follow-up of physical defects for correction, they conduct health classes in the first six grades. Health clubs have been formed in many schools, the success of these clubs depending largely on the interest of the teachers. One school in particular showed how completely health teaching may permeate the entire course of study if carried on by enthusiastic teachers. It is interesting to note that this school, although in one of the poorer districts, showed the lowest per cent of undernourished children of all the Mount Vernon schools.

VOLUNTEER NURSING ASSOCIATION

The Volunteer Nursing Association, with a staff of five nurses, does all kinds of bedside nursing, including contagious disease nursing. There were 1,045 calls made during 1923, divided as follows:

Medical	620
Surgical	128
Maternity	88
Pre-natal	114
Com. Disease	95

PLAYGROUNDS

Mount Vernon has not yet developed adequately equipped public playgrounds for children, and children are not permitted to play on the grass in the four parks within the city limits.

COMPARISON WITH OTHER CITIES

Mount Vernon is shown by the accompanying analysis to be in the upper group of cities for seven of the eleven major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	★		
T. B. Control	H	.....		★
Pre-natal	H	.....		★
Infant	H	.....		★
Pre-school	H	.....		★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H★		
Pop. Health Inst.	H★		

¹See page 273.

Of the activities which have not yet been well developed, mention may be made of the laboratory and venereal disease service. Some plan for hospitalization of communicable disease would also seem desirable with the increase in apartment house dwellings.

MUNCIE, INDIANA

Surveyed, February 28—March 3, 1924

Muncie is located 62 miles northeast of Indianapolis with excellent railroad facilities and several good automobile highways. The city is surrounded by good farm land. The population in 1920 was 36,524, with about 6 per cent negroes and 2 per cent foreign born. The estimated population in 1923 was 40,321.

The industrial growth of the city has been rapid, the leading products being fruit jars, auto gears and accessories, lawn mowers, bed springs, iron castings, glass insulators and structural steel.

The Board of Health, appointed by the mayor, consists of the health officer and one Republican and one Democrat. The Health Department includes a physician who devotes only part of his time to city health affairs, and his wife who acts as clerk in addition to her home duties. A policeman is assigned by the police department for sanitary inspections. He calls at the home of the health officer twice a day, receiving communicable disease calls and nuisance complaints. He placards homes and fumigates with formaldehyde at the end of quarantine. This arrangement had been in effect for only about a year at the time of the survey, and vital statistics records back of the current year could not be obtained. Neither were deaths from communicable diseases for the current year obtainable. Spot map studies of the incidence of disease are not kept. Neither has it been possible for the health officer to find time, in addition to his routine duties, for any educational work concerning immunization against diphtheria, typhoid fever and smallpox. Although Muncie had had an epidemic of mild smallpox for about two years, there had been no wholesale vaccination effort.

Milk dealers are registered with the Health Department but no effort is made to make sure that all are registered. There is no dairy farm inspection and no laboratory analysis of milk being done by the city. A few inspections have been made by the state milk inspectors. About 70 per cent of the milk is pasteurized, but there is milk being sold raw in Muncie from cattle not tuberculin tested, and the pasteurizing plants are not equipped with recording thermometers so that some one in authority may have definite information that pasteurization is properly done.

There is no official inspection of other food handling establishments.

The state laboratory in Indianapolis does the diagnostic work for Muncie,

and the state Health Department supervises the venereal disease clinic, in which there were 2,601 treatments given during 1923.

HEALTH OF THE SCHOOL CHILD

The staff employed by the Board of Education for school medical work consists of a physician, an eye, ear, nose and throat specialist, a dentist and two nurses. These, with the assistance of the teachers examine all school children annually, recording their findings on a permanent record card with space for yearly examinations through the twelve years of school life. A copy of the record of the first examination given a child upon entering school is sent to the parent. Parents are urged to come to the school for consultation with the nurses, rather than sending the nurse to the homes to follow up physical defects for correction. By this arrangement, the two nurses find time to visit the lower grades about every two weeks and the upper grades once a month, to make a rapid examination of all children. During an epidemic period they attempt to do this oftener. A physician's certificate is required from all pupils out of school longer than three days. The superintendent feels that absences, and consequently failures in promotions, have been decreased by the school medical service, sufficiently to repay the Board of Education for the money spent.

The number of children attending the school dental clinic is small, as it is open only to indigents.

There are scales in all schools and children are weighed once a month. There are no open-air classes for underweight or pre-tuberculous children. Physical examinations are not given before issuing work permits to children. Some good-health teaching is being done by individual classroom teachers, the school nurses give special talks in addition to the health teaching given to individuals in the course of their routine work, and the home economics department offers courses in foods and clothing, special diets for invalids and underweights, and home nursing.

PRIVATE AGENCIES

The Visiting Nurse Association, with about \$10,000 to spend annually, employs a trained director, four graduate nurses and one student nurse, to do district nursing. A large part of their work is bedside nursing, due to the inadequate hospital facilities in Muncie. There is only one hospital of 51 beds, in use most of the time for surgical cases. Only about 10 per cent of the births in Muncie are in the hospital. Contract medical work is done for several factories.

At the time of the survey the Association had not yet been able to establish child welfare clinics, but an effort is made to see every baby once a week for the first 5 weeks of its life and once a month for the first year. There were 245 babies on the Association records during 1923.

The tuberculosis work is done by the County Tuberculosis Association, with one nurse and a student nurse. Sporadic attempts have been made to hold clinics. During 1923, 130 persons were examined at these clinics and 963 home visits were made. There are no local tuberculosis hospital facilities.

COMPARISON WITH OTHER CITIES

Muncie, one of the smallest of the group of cities studied, is still in its infancy as regards organized health work. The accompanying table shows that for eight of the eleven major activities it falls in the lowest third of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	O	.....	.....★
T. B. Control	P★		
Pre-natal	P★		
Infant	P	.....	.....★
Pre-school	★		
School	E	.....		.....★
Sanitation	H★		
Laboratory	O★		
Pop. Health Inst.	★		

¹See page 273.

The city has just passed through a political upheaval and, emerging from that, has awakened to a greater civic consciousness of its needs. The Department of Education has already achieved much in its health work. Close cooperation between the private agencies and the medical profession is essential.

NEW BRITAIN, CONNECTICUT

Surveyed, May 5-10, 1924

New Britain is located in attractive undulating country about 10 miles southwest of Hartford, and half way between New York City and Boston. The city was established by pilgrims from Massachusetts who gradually moved westward into Connecticut in the middle of the 17th Century, developing the farming land which they found there. In recent years growth has been rather rapid, the 1920 census population being 59,316 and the estimated population for 1923, 64,867. About 36 per cent of the inhabitants are foreign born and less than 1 per cent are negroes.

New Britain is primarily an industrial community with numerous manufactures, and famous throughout the world as a great hardware manufacturing center.

Housing provision is adequate for the population. The one-, two- and three-family house predominates.

DEPARTMENT OF HEALTH

The Board of Health consists of the mayor, ex-officio, and six other members appointed by him. The health officer is appointed by them for an indefinite term. The present health officer is a physician, who has also had public health training, and who has a broad concept, on a complete and satisfactory public health program. He is assisted by two clerks, three sanitary inspectors, one meat inspector, one milk inspector, one bacteriologist, one tuberculosis nurse and a part-time dentist. At the time of the survey, due to a smallpox epidemic, there were six nurses, a janitor and a cook at the communicable disease hospital. It was expected that, at the termination of the epidemic, the number of nurses would be reduced to three.

The health officer devotes a good deal of time to cooperation with the local physicians in the diagnosis of communicable diseases. To this is probably due the fact that the reporting of communicable diseases in New Britain is far above the average for the 86 cities. The prevalence of diphtheria indicates the need of an organized campaign for immunizing the younger children against diphtheria. A recent smallpox epidemic was efficiently handled by the Health Department, and 32,000 residents were vaccinated in a little over six weeks. The esprit de corps manifested by the Health Department staff during the epidemic is especially noteworthy.

Births and deaths are reported to the city clerk. Very little seems to be done beyond recording the information received. No studies or special tabulations could be found.

The tuberculosis service, maintained jointly by the Health Department and the Tuberculosis Relief Society, includes a specialist, and the services of two nurses for the clinic and follow-up work. The large number of children examined at the clinic during 1923, 348 in number, indicates that particular attention is being directed toward finding incipient cases. The Tuberculosis Relief Society also maintains a free fresh-air camp for ten weeks during the summer, and 253 children spent some time at this camp during 1923.

There is no organized venereal disease service being conducted in New Britain.

HEALTH OF THE SCHOOL CHILD

The school health personnel is under the direction of the Department of Education. At the time of the survey, it consisted of a physician, three nurses, and three dental hygienists, all giving full-time. Most of the time of this staff is occupied with inspections to detect communicable disease and with annual general physical examinations. Very little of their time is devoted to follow-up work in the home for the correction of the defects. All the schools are provided with scales, and the children are weighed and measured every two months. Nutrition classes were begun in both public and parochial schools but were later discontinued in the public schools because they seriously interfered with the school program. An open-air school, with 64 children enrolled, has rest periods and special food. An effort is being made to correlate health work with other subjects in the school program.

VISITING NURSE ASSOCIATION

The Visiting Nurse Association, with a budget of \$13,744 for 1923, employs six nurses who do general bedside nursing, including the work of the Metropolitan Life Insurance Company. In the course of their visiting they do some pre-natal and infant welfare work. Two well-baby conferences are held weekly, without medical attendance. The work consists of weighing and measuring babies and giving advice to parents.

OTHER PRIVATE AGENCIES

Owing at least in part to the fact that the health officer has achieved an unusually large amount of good publicity on public health, the clubs and private organizations of the city seem to have a definite interest in health. The Women's Club and the Rotary Club help to support the Fresh Air Camp and do work for crippled children, and the Y. M. C. A. and the Y. W. C. A. conduct special classes for health teaching.

CHILD LABOR

There is a rather large amount of child labor in New Britain. In 1923, 929 children between the ages of 14 and 16 applied for working permits, and 863 permits were granted. There are no continuation schools for these children.

COMPARISON WITH OTHER CITIES

New Britain, as will be seen by the accompanying chart is doing unusually good work in some fields of public health, as, for instance—the control of communicable disease and popular health instruction. But it is doing practically nothing in some other respects, as for example, in venereal disease control and organized work for the pre-school child.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	★		
T. B. Control	H-P	.....		★
Pre-natal		.....	★
Infant	P	.....	★
Pre-school	★		
School	E	.....		★
Sanitation	H	.....	★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....		★

¹See page 273.

The establishment of a venereal disease clinic and clinics for pre-natal, infant and pre-school welfare are matters that might well engage the thoughtful attention of the Health Department. The correlation of the school medical service and the work of the tuberculosis relief society should result in good preventive tuberculosis service.

NEW CASTLE, PENNSYLVANIA

Surveyed, March 24-29, 1924

New Castle is situated in gently rolling country, fifty miles northwest of Pittsburgh at the junction of two rivers. The city has an area of about 8 square miles, and presents a rather scattered appearance being divided into four parts by natural barriers.

The population in 1920 was 44,938. The estimated population in 1923 was 48,058. Negroes constitute about 2 per cent and foreign born about 19 per cent of this population.

The principal industries of the city are the manufacture of sheet steel and tin plate, Portland cement, tin cans, pottery and china. Although the nature of the industries might indicate otherwise, New Castle presents a cleaner appearance than many of the other industrial cities in Pennsylvania. The residence districts are composed almost entirely of one-family houses.

DEPARTMENT OF HEALTH

The city council, consisting of the mayor and four commissioners, acts also as the advisory Board of Health. The health officer is a practicing physician who devotes less than half-time to Health Department administration. He is assisted by a nurse, a clerk, and three sanitary inspectors, all full-time employees. The Health Department appropriation for 1923 was \$10,923, or about 23 cents per capita.

Vital statistics are kept by the local state registrar. None of the local health officials of city, county or private agencies had calculated the infant mortality rate for the preceding year at the time of the survey.

In the Health Department, records of communicable disease were very meager and records of deaths from specified causes were absent entirely. Spot maps were kept of four or five of the most prevalent communicable diseases. The one Health Department nurse devotes the major part of her time to communicable disease visiting, and a few hours a week are devoted to maternity and infant welfare and bedside care for indigents. With the aid of the state about 290 persons were immunized against diphtheria in 1923. In that same year the superintendent of schools in his annual report made a strong plea for the use of toxin-antitoxin the following year.

The three inspectors in the Health Department divide their time between quarantining, nuisance inspection, and milk and food inspection. About

11,000 sanitary inspections were made in 1923. There were also 1,520 inspections of food handling establishments.

No inspections are made of dairy farms. In spite of the fact that New Castle suffered a milk-borne typhoid epidemic in recent years, only about 25 per cent of the supply is pasteurized. About 10 per cent of the retail milk supply is sold as bulk milk. There has been an effort to tuberculin-test the dairy cattle in the county, but raw milk from untested cattle is undoubtedly being sold.

New Castle's water supply is privately owned. It is a river supply, subjected to sedimentation, rapid sand filtration, and chlorination, with good results.

Almost all houses in New Castle are connected with sewers. A sewage disposal plant was in process of construction at the time of the survey.

HEALTH OF THE SCHOOL CHILD

The superintendent of schools had been in office a comparatively short time when New Castle was surveyed, but already there was evidence of a wide-awake interest in a health program. The Board of Education employs a physician, a nurse, and a dental hygienist, all full-time, and a part-time dentist. The physician gives each child an examination annually and there are records of the defects found. Insufficient nursing staff, however, has made it difficult to do much follow-up and the records of corrections are very meager. Schools are not equipped with scales and children are only weighed and measured once a year, portable scales being used. There are no open-air classes for underweights or for children exposed to tuberculosis. Milk is available in the schools both morning and afternoon.

There were 3,338 children examined by the dentist and dental hygienist during 1923, and 150 educational talks were given in the schools.

There is no director of health education in the school system, but the supervisor of physical training is doing quite effective work with some of the more interested teachers. The state course in health education is followed and with the enthusiasm evinced by many of the teachers, a good health program should soon be achieved. Several of the elementary grades have health clubs.

A physical examination is given all children applying for working permits. In 1923 there were 219 examined and only 119 permits issued by the school physician.

OTHER AGENCIES

The outstanding educational clinic and nursing service of the community is carried on as a joint operation by the state through the county medical director, the Associated Charities, the Child Welfare Society, and the Milk and Ice Fund, who have combined and employed three nurses. Two are

considered state nurses, and the third is employed by the other organizations. Clinics for tuberculosis, venereal disease, pre-natal and infant welfare are attended by these nurses. They are also required to do quarantine work in the county, which reduces the time they can give to home visiting. In 1923 they made 157 tuberculosis visits. They, and the city nurse together, made 227 pre-natal visits and 866 child welfare visits. The total attendance at the infant welfare clinic was 1,498 in 1923. Two hundred and seven children attended the pre-school clinic. The infant and pre-natal clinics are held in spacious and well equipped rooms given free by a local department store.

There are no local beds for hospitalizing tuberculosis patients. Advanced cases are sent to the state hospital.

The Red Cross employs two nurses and a dental hygienist. The latter works in the parochial and county schools. One nurse does bedside nursing for the city and county. The other one conducts health clubs among eighth grade girls.

COMPARISON WITH OTHER CITIES

As the accompanying chart shows, New Castle stands among the upper third of cities in 4 of the 11 major activities, is among the middle third in five, and falls to the lower third in only two.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O-P★		
T. B. Control	O-P★		
Pre-natal	H-O-P	.....		★
Infant	H-O-P	.....		★
Pre-school	H-O-P	.....		★
School	E★		
Sanitation	H	.....		★
Laboratory	H★		
Pop. Health Inst.	★		

¹See page 273.

If the vital statistics are to be of use to a city in its health program there should be more than a routine tabulation of births and deaths. The school health program is well begun and promises to develop rapidly. The Health Department suffers from the lack of a full-time health officer with time to plan and direct a complete educational program.

NEWTON, MASSACHUSETTS

Surveyed, March 30—April 5, 1924

Newton, 18 square miles in area, is an attractive residential community adjacent to, and west of Boston. It is made up of 11 villages. Parks and squares abound and the Charles River affords recreation in many forms. The single-family, detached dwelling predominates. The residential character of the city has been preserved by determined refusal to foster industry within it. A zoning ordinance has recently been passed to help maintain the city as a residential community. There are, however, about 10 large industries confined largely to four of the villages. The chief articles of manufacture are textiles, lace curtains, silk, textile machinery, cordage, fire alarm systems and paper.

The city of Newton was founded in 1630, and was chartered as a city in 1873. The population in 1920, according to the census, was 46,054, of which 77 per cent were native born whites. The foreign born group is largely concentrated in the sections in which the industries are located. In 1923 the estimated population was 48,305.

DEPARTMENT OF HEALTH

The Board of Health consists of three members, appointed by the mayor, and confirmed by the board of aldermen. The chairman is a physician who has held this office for more than 30 years. He is also president of the Newton Medical Club. He has occupied a prominent position in the public health work in the community, and is the dominating influence in determining the policy of the Health Department, and in its administration usually functions as the health officer. The title of health officer is conferred on the agent, who is secretary to the Board of Health and is appointed by it. He serves for an indefinite term, under civil service appointment, and is employed on a full-time basis. The present agent has been in office for the last 18 years. His work consists primarily of dairy and food inspections and communicable disease control.

The work of the Health Department includes sanitary and nuisance inspections, food and milk control, medical school inspection, including the maintenance of a dental clinic, communicable disease control, and tuberculosis visiting by a special tuberculosis nurse.

The total expenditure of the Health Department in 1922 was \$43,415, of

which \$18,365 was spent for hospitalization. Deducting this item, the per capita expenditure was 52 cents.

Employees of the Department include a full-time clerk, one full-time tuberculosis nurse, one full-time sanitary inspector, a part-time employee who holds the two positions of milk inspector and bacteriologist, and a staff for school medical inspection made up of seven part-time physicians, each devoting about two hours a week to their official duties, five full-time nurses, one full-time dentist, and one full-time clerk who assists the dentist.

The Health Department headquarters are in the city hall; the laboratory work, however, is done in the drug store operated by the Health Department bacteriologist. The laboratory work done is limited to butter fat tests of milk, and laboratory diagnoses of communicable disease specimens. No bacteria counts are made of the milk supply, which is 67 per cent pasteurized, nor are counts made of the water supply.

Vital statistics are in charge of the city clerk, to whom births are reported. Death certificates are filed with the city clerk after they have been held by the Health Department for a month. Cases of communicable disease are reported to the Health Department. Information on vital statistics is contained in the annual report of the Health Department.

Communicable disease reporting is fairly complete. Cases are visited by the health agent and the chairman of the Board of Health is available to make diagnoses in doubtful cases. Spot maps are kept of diphtheria and scarlet fever. Free immunization against smallpox and diphtheria is readily available, and vaccination is required before children may attend school. An intensive campaign has been waged to promote the use of toxin-antitoxin, which has been confined largely to children of school age. During 1923 there were 555 children immunized, and 664 were given the Schick test.

No clinics for tuberculosis are conducted, but during 1923 the Health Department nurse made 1,281 visits to the homes of cases.

HEALTH OF THE SCHOOL CHILD

Medical examination by the Health Department is confined to the public schools. Examinations are made at a rather rapid rate, and children are not examined routinely at regular intervals. Information is not available regarding the number of defects found and corrected. Dental inspection is more satisfactory; it is made in all grades by the dentist, and clinics are held for correction of defects. In 1923 he gave 2,233 treatments, 27 per cent of which were fillings and 15 per cent extractions.

Health education has been organized and developed to a more marked degree than in any of the 86 cities. Children are weighed and measured once a year by the school nurses. The teachers, however, make these measurements once a month. All schools are provided with scales, donated by the Junior Red Cross. A complete classroom record is maintained, and the educational value of these observations is utilized. There is an organized

course in health education which is started in the kindergarten. Interesting and effective methods of presenting the subject, such as posters, charts, stories, games and other devices, are used. Morning milk and crackers are sold at cost.

Through the cooperation of the health committee of the Newton Welfare Bureau, a private organization, unusual attention to undernourished children has been made possible. There are special health classes, with about 175 pupils, for those who are 10 per cent or more underweight. The classes meet twice a week; special health teaching is given, and the condition of the children is supervised by weighing once in two weeks, regular visits by four physicians, specially employed for this work, and by the school nurses, who also do home visiting in this connection. The physicians and nurses receive extra remuneration for this work from the Newton Welfare Bureau.

NEWTON DISTRICT NURSING ASSOCIATION

This organization is a private one, and consists of three graduate nurses, one of whom is supervisor, three pupil nurses, and a clerk. The annual budget is \$6,000. In addition to doing general bedside nursing and all the work for the Metropolitan Life Insurance Company, the association provides pre-natal, infant and pre-school age service. The pre-natal work consists only of home visiting. During 1923 there were 559 calls on expectant mothers made.

Infant welfare clinics are held four times a week for one hour. A physician is in attendance each time, and home visits are made by the nurses. During 1923 there were 175 infants observed, and approximately 2,500 home visits paid. No special clinics are held for pre-school age children, who are included in the infant welfare service.

NEWTON HOSPITAL

This is a private hospital with a total of 182 beds, 30 of which are obstetrical, and 50 for contagious diseases. A series of out-patient clinics are conducted, among which is a pre-natal clinic, started in June, 1923. A physician and a nurse are in attendance, and during 1923 there were 14 cases observed. An eye, ear, nose and throat clinic is held weekly, the total attendance in 1923 being 2,711, of which 1,087 represented children. The total attendance for the year at the orthopedic clinic was 1,613.

NEWTON CENTRAL COUNCIL

The Newton Central Council was organized in 1923, in order to coordinate the activities of 34 health and welfare organizations in the city. The headquarters of the council are also those of the nursing association, the Newton Welfare Bureau and the American Red Cross. A community survey has

been started by the council in an effort to unify the various activities in the city; health work is one of the subjects which will be considered.

OTHER PRIVATE AGENCIES

The Newton Welfare Bureau is a private organization which engages in relief and health work. Its health committee has been mentioned in connection with the special health classes in schools, the funds for which are raised by the sale of Christmas health seals; the sale is conducted by the Federation of Women's Clubs.

There is a large number of women's clubs, some of which are doing important health work. The attitude of the women's clubs in taking a determined stand for the pasteurization of all milk from non-tuberculin tested cows, is to be particularly commended.

COMPARISON WITH OTHER CITIES

Newton ranks among cities in the upper third in four of the major health activities, falls in the middle third in four other activities, and lies in the lower third in three.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	H★		
Pre-natal	P	.....		★
Infant	P	.....		★
Pre-school	P★		
School	H-E	.....		★
Sanitation	H	.....		★
Laboratory	H★		
Pop. Health Inst.	★		

¹See page 273.

Newton's position would be materially improved by the establishment of tuberculosis clinics, a reorganization of laboratory work, pre-school age clinics, and the introduction of medical inspection of school children.

The city enjoys an advantage over many of those surveyed, in that a community interest exists for improving health conditions, as shown by the presence of a well informed and active public health council.

NIAGARA FALLS, NEW YORK

Surveyed, June 2-7, 1924

The city of Niagara Falls is located at the farthest navigable point of the Niagara River just above the famous falls. It is about 22 miles from Buffalo. The city has for many decades been a great scenic center, but in recent years, by the harnessing of part of the water power a promising industrial city has developed and is growing rapidly. There are factories for aluminum, carborundum, iron alloys, sodium, calcium carbide, various other electro chemicals, flour, paper, shredded wheat and many other products.

Growth has been rapid. In 1920 the population was 50,760, with 1 per cent negroes and about 35 per cent foreign born. In 1923 the estimated population was 58,082.

There are a few tenements but most of the residences are of the one- or two-family type and many of them are owned by their occupants. The business district is scattered over a large area.

DEPARTMENT OF HEALTH

There is no board of health. The part-time health officer, appointed by the city manager, is a physician much interested in public health. His staff includes two clerks, one plumbing inspector, one food inspector, one inspector dividing his time between communicable disease and sanitary inspections, a part-time bacteriologist and a full-time technician, five nurses and three part-time physicians devoting only a few hours each to clinics. There is also a communicable disease hospital which is considered a part of the Department of Health and has a staff of a superintendent, three nurses and four other employees. The entire appropriation for 1923 was \$60,233, of which about \$20,000 was for the hospital, leaving about 70 cents per capita for other health activities.

There are three maternity and infant welfare clinics in the Health Department receiving the attention of a part-time physician and three full-time nurses. This work is carried out in three stations in the city, and a large amount of follow-up work is done. In 1923, the attendance at the clinics was 3,439 and there were 8,402 home visits made. No organized work is done as yet for children of pre-school age. One pre-natal clinic is held a month and the nurses doing infant welfare work devote a little of their time

to pre-natal work. During 1923, they made 729 home visits to expectant mothers.

The Health Department also conducts a venereal disease clinic which gave 2,652 treatments in 1923, and a tuberculosis clinic to which the local tuberculosis association contributes some support. At the tuberculosis clinic 223 persons were seen in 1923 and 1,877 home visits were made. There were 171 tuberculosis cases cared for in state or county hospitals.

A large volume of laboratory work is done including among other things 2,207 milk analyses in 1923. More than 90 per cent of the milk supply is pasteurized and about 20 per cent of the dairy cattle are tuberculin tested. The dairy inspector was able to make 2,656 inspections of food handling establishments in addition to his other duties during 1923.

In spite of the fact that only part of the time of the sanitary inspector and the health officer is devoted to communicable disease control (in addition to the hospital service) some educational work is being done regarding the value of immunization. During 1923, vaccination against smallpox was given 500 persons, and diphtheria immunization was given to 2,000.

The bureau of vital statistics is maintained in the home of a city employee not connected with the Health Department.

HEALTH OF THE SCHOOL CHILD

The school medical inspection, although paid for out of the funds of the Board of Education, is under the direction of the Health Department. Four part-time physicians, four full-time nurses, and one full-time dentist do the work. There is one physician and one nurse assigned to the parochial schools alone. Children are examined once a year, rather rapidly, with a more thorough examination for special cases. In the school dental clinic 2,064 children were treated in 1923. All children are weighed and measured once a year and those 10 per cent or more underweight, once a month.

Milk is available in the schools.

Health education work in the schools is as yet unorganized and depends entirely on the initiative of individual teachers.

There are no playgrounds in the city except those in connection with the schools. A small amount of apparatus is set up in the school playgrounds during the summer.

ANTI-TUBERCULOSIS ASSOCIATION

Practically the only private organization doing health work is the local tuberculosis association whose budget is only about \$2,000. They pay part of the salary of the nurse in the Health Department and supply her with an automobile and its upkeep. They distribute a good deal of printed matter free among factory workers.

There is a community chest which supplies funds to the various relief organizations.

There is a good library in Niagara Falls with an unusually large number of books and pamphlets on health subjects.

COMPARISON WITH OTHER CITIES

Niagara Falls, as will be seen by the accompanying table, is doing organized work in all of the eleven major activities except pre-school.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	H★		
T. B. Control	H-P★		
Pre-natal	H★		
Infant	H★		
Pre-school	★		
School	E★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	P★		

¹See page 273.

Almost all of the activities in which the Health Department is engaged fall among the upper group of cities. If the present health officer were permitted to devote all his time to the Health Department he should be able to develop an excellent program for the city. It seems desirable that the keeping of vital statistics should be added to the other duties of the Health Department so that these records may be accessible and of more value to the health officer.

PASADENA, CALIFORNIA

Surveyed, March 10-15, 1924

Pasadena lies on a gentle slope at the foot of the Sierra Madre Mountains, 9 miles northeast of Los Angeles and about 20 miles inland from the Pacific Ocean. The first settlers, largely from Indiana, came to this spot about 1874. Growth has been steady ever since. The population in 1920 was 45,354 and the estimated population for 1923 was 53,388. Foreign born represent about 15 per cent of this population and negroes about 2 per cent.

Pasadena is essentially a residence city with the one-family type of dwelling varying in size from small bungalows to large mansions. Ten small parks and one large one add to the natural beauty of Pasadena.

Many of Pasadena's residents are engaged in business in Los Angeles, but there are nearly 100 manufacturing plants in the city. One of the leading industries is the packing and shipping of fruits.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The health officer, who is appointed by the city manager, is also city physician, in which capacity he has charge of the emergency hospital, and is the examining physician for the schools.

Other Health Department personnel includes three nurses, two sanitary inspectors, one food inspector, a bacteriologist and a clerk, all full-time employees. The Health Department budget for the year 1922-23 was \$32,030, apportioned as follows:

Health Administration	\$4,210
Prevention of Disease	7,670
Medical Service and Nursing	8,930
Food and Sanitary Inspectors.....	9,000
Emergency Hospital	1,320
Maternity Hospital	900

It will be observed from the portion of the budget assigned to medical service a large part of which is for dispensary service and the Emergency Hospital that the health officer spends a large part of his time and budget on work which is not, in the strictest sense of the word, public health. Other duties of the department include the recording and analyzing of vital statistics, inspection of foods, sanitation, control of communicable disease, laboratory service and some cooperation with a private organization in infant

welfare work. A portion of the time of the health officer is given to school medical inspection work.

Because of the good quality of the raw milk supply, the constant supervision, and the fact that all dairy herds are tuberculin tested, there has been little agitation for an increase in the amount of milk pasteurized. At present only about 15 per cent of the supply is pasteurized. The lack of pasteurization, however, constitutes a potential danger from milk borne outbreaks of communicable disease.

HEALTH OF THE SCHOOL CHILD

The medical inspection work in the schools is part of the work of the Division of Child Welfare. The children are weighed and measured and given a preliminary inspection by the nurses. Those with physical defects are referred to the physician for further examination and those 10 per cent or more underweight are given milk. Children needing dental work are referred to the school dentist. In addition to examination for defects and home follow-up for correction of defects, the nurses make inspections for communicable disease and re-examine and issue permits for return to school after absences from this cause. The amount of diphtheria among school children indicates the desirability of a campaign to immunize children of pre-school age, and susceptible school children against this disease.

There is an open-air school for pre-tuberculous children, and one of the high schools is conducting a successful experiment with a nutrition class.

There is an organized health crusade in the elementary schools and a daily twenty-minute period for health instruction. The Department of Physical Education in the public schools has an elaborately developed program both during school hours in gymnasiums and after school hours on playgrounds. Far more attention and money has been given so far to the program for the high school and junior high schools than for the elementary schools; about two-thirds of the budget is expended for this upper group.

PRIVATE AGENCIES

The Pasadena Dispensary is housed in a building erected on grounds owned by the Pasadena Hospital. Some of its clinics are equipped and operated by private groups, but the main budget comes from the Community Chest. There is an out-patient department with social service field work. Infant welfare clinics and pre-natal clinics are held twice a week under medical supervision. There are also tuberculosis, venereal disease, psychiatric and dental clinics in the same building. It does not seem that there is a great deal of home follow-up work being done. However, the dispensary works in close cooperation with the hospital in the matter of social service work.

The Council of Social Agencies, which has been in existence a relatively

short time, has aided greatly in coordinating the work of volunteer agencies in Pasadena. A tuberculosis preventorium had been definitely planned at the time of the survey. A communicable disease hospital had just been completed at that time, but had not yet been put into operation owing to some resistance on the part of the neighboring tax-payers.

There is a modern day nursery caring for an average of 62 children, and a Children's Training Association, which gives homelike care to neglected children.

WATER SUPPLY

In common with that of many other cities on the western coast range, the water supply of Pasadena has been somewhat affected by the lack of snow and rain in the past few years. This is realized and plans are under way to increase the storage facilities by drawing from the San Gabriel River.

COMPARISON WITH OTHER CITIES

Pasadena, as will be seen by the accompanying chart, maintains some organized work for each of the 11 major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	P	.....	★
T. B. Control	P	.....	★
Pre-natal	P	.....		★
Infant	H-P	.....	★
Pre-school	P	.....	★
School	H-E	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....	★

¹See page 273.

The work*being done for the pre-school child is slight, but by comparison with the other cities, Pasadena receives a place in the middle group.

It does not seem desirable that two-thirds of the physical education budget should be expended for one-third of the school population, especially since that one-third is the older group.

Two things which it would be well for the Health Department to consider are an increase in the amount of pasteurized milk and the development of a program of popular health instruction in connection with the communicable disease work.

PASSAIC, NEW JERSEY

Surveyed, April 8-12, 1924

Passaic is situated at the head of navigation on the Passaic River, and is 9 miles from Newark and 12 miles from New York. The principal business street is traversed by a railroad line which furnishes the chief commutation service to New York. In addition to railroad facilities, the river is used chiefly for lumber and coal transportation. The principal industries are the manufacture of woollens and worsteds, rubber goods, cotton cloth, chemicals, metal ware, and automatic machinery.

The industrial district is largely confined to the east part of the city. Passaic is $3\frac{1}{4}$ miles in area, and has trolley and bus service to the numerous cities and villages surrounding it.

Passaic was settled by the Dutch in 1679 and was called Paterson Landing; in 1873 it was chartered as a city. The population in 1920, according to the census, was 63,841, of which 41 per cent was foreign born. The estimated population in 1923 was 67,111.

DEPARTMENT OF HEALTH

The municipal government is administered by a mayor and four commissioners. This group of five acts as an advisory council to the Department of Health, and appoints the health officer for an indefinite term. The position is a part-time one, and is now held by a physician who devotes about 18 hours a week to his official duties. He has been in office for 12 years, and is familiar with public health practice.

In addition to the health officer, the department includes the following full-time employees: a plumbing inspector who also handles nuisance complaints, a food and drug inspector, a special officer, six nurses, one of them a supervising nurse, one devoting her time to tuberculosis work, the other four to maternity, infant and health work in parochial schools, a clerk, and a secretary. There are also two part-time employees, a veterinarian for milk supply supervision, and a physician as medical inspector in parochial schools.

The budget of the Health Department in 1923 was \$32,176.

Excluding the isolation hospital item, of \$8,776, the budget was \$23,400, or 35 cents per capita.

The registration of births and deaths is in charge of the local registrar, in the city clerk's office, while cases of communicable diseases are reported

to the Health Department. The information contained in the records of the registrar is available in the office of the Health Department, which recognizes their value in guiding its activities. However, no periodic reports containing among other things the usual classification and studies of vital statistics, are published.

The reporting of communicable disease cases is fairly complete, measured by the ratio of cases to deaths. Spot maps are not kept, but cases of communicable disease are recorded on a weekly chart. The health officer acts as diagnostician in doubtful cases, and made 123 such calls in 1923. Smallpox control measures require that children be vaccinated before they can enter school. Free immunization against smallpox, diphtheria and typhoid are available.

Pre-natal clinics were started in January, 1924, and are held once a week by the health department nurses, who also do follow-up work in the homes. There is no physician in attendance. During 1923, 321 home visits were made. It is estimated that only about 20 per cent of the total births in the city received the limited supervision provided by the clinic; the recent inauguration of the service must be borne in mind in this connection.

The infant welfare service is such as to place the city among the upper 29 cities. Clinics, for well babies only, are held twice a week, for one hour, with a physician attending. The Department of Health nurses deliver the birth registration notices to the homes, and encourage attendance at the clinic. During 1923 there were 1,446 infants in the clinic, and 6,946 home visits made by the nurses. About 75 per cent of the births in the city receive post-natal supervision to the extent of at least three calls. There are no clinics for children of pre-school age.

The work of sanitary inspection during 1923 included 5,736 inspections of food handling establishments; and 212 other inspections.

The supervision of the milk supply is in the hands of the Health Department veterinarian. The per capita consumption is about one pint a day. Until very recently no laboratory was maintained by the city for milk and food analyses. The diagnostic laboratory work is done by the state laboratory at Trenton. With the establishment of a laboratory April 1, 1924, control of the milk supply is contemplated to include a weekly bacteria count of all distributors. An ordinance recently enacted requires the pasteurization of all milk except certified. At present 75 per cent of the supply is pasteurized. Dairy inspection is emphasized and about 20 per cent of the cattle are tuberculin tested. It is expected that efforts will be made to make the latter practice universal.

The Department of Health service in school medical supervision is confined to the parochial schools, and consists of inspections and follow-up work by the nurses; pupils who seem in need of special attention are referred to the medical inspector in the Health Department. The parochial school enrollment was 3,650 for 1923.

SCHOOL HEALTH WORK

The Board of Education is responsible for the medical supervision of children in the public schools, in which 10,209 pupils were enrolled in 1923. The staff provided consists of a part-time chief medical inspector, assisted by three part-time physicians and five nurses. A part-time dentist and a clerk are also employed. Each child is examined annually by the physicians, the nurses rendering the usual assistance by making inspections of vision, hearing, and taking height and weight measurements, and keeping records. During 1923 there were 11,076 children examined, at the rate of 25 to 30 an hour. Of this number 3,353 were reported to parents for treatment of defects, and 2,137 had defects corrected. Figures showing the number of corrections of the various classes of defects were not available. Dental inspection is made by the dentist in the first grade only; defects found are treated as are also those detected by the physicians in the other grades. The bulk of the work done by the dentist during 1923 was extraction.

All children are weighed and measured twice a year, underweights once a month. In all schools milk is served mornings to underweights; in five schools it is served to all children who wish to pay for it. Special attention is given by the nurses to the feeding of sub-standard children.

A course in health education is in the process of preparation. This subject is now correlated with a course in Industrial Arts which readily lends itself to this work. Every public school has an organized health club in each of the first five grades, which conducts daily inspections of the children.

OTHER HEALTH ACTIVITIES IN THE COMMUNITY

Mosquito control work, consisting of drainage and oiling, has been carried on by a County Mosquito Commission, as the city is in an area requiring such activity.

Venereal disease clinics of two hours' duration are conducted once a week by the state at the general hospital. During 1923, there were 145 new cases, and 338 treatments administered.

The Anti-tuberculosis Association, whose work is supervised by the Department of Health, conducts a clinic once a week, with a physician in attendance, and follow-up work in the homes by nurses. During 1923, there were 508 clinic patients, and 811 visits by the nurses; 19 patients were hospitalized. No preventorium beds are available. A summer camp is conducted by the association for about 120 children. They also finance two nurses under the Health Department.

The Passaic Visiting Nurses Association employs three nurses. The budget for 1923 was \$4,973. The major part of the work is for the Metropolitan Life Insurance Company. Of the total 5,753 visits made in 1923, 157 were other than insurance cases.

COMPARISON WITH OTHER CITIES

Passaic ranks among the upper 29 cities in three of the 11 major health activities, the middle 29 in five activities, and among the lower 29 in three.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	O	.....	★
T. B. Control	P	.....	★
Pre-natal	H★		
Infant	H	.....		★
Pre-school	H	.....	★
School	H-E	.....		★
Sanitation	H	.....	★
Laboratory	H-O★		
Pop. Health Inst.	P	.....	★

¹See page 273.

Measures have been inaugurated which, when developed, will be effective in materially improving the position of the city.

PAWTUCKET, RHODE ISLAND

Surveyed, May 19-24, 1924

Pawtucket, approximately 9 square miles in area, lies on the Blackstone River, in the northwestern part of Rhode Island, near the Massachusetts border line and about 16 miles northeast of Providence. The city is essentially a mill community, and is one of the largest cotton textile centers in the world, manufacturing such cotton products as thread, yarn, cloth, hosiery, braids and laces. It has a wide diversification of commercial interests. Other important articles of manufacture are cotton machinery, bolts and nuts, and jewelry; there are also a large number of dyeing and bleaching plants.

The first settlement was made in about 1666, and Pawtucket was chartered as a city in 1888. The population in 1920 was 64,248, of which 33 per cent were foreign born. The largest foreign born groups are the French Canadian, English, Irish, Scotch, Italian, Polish and Portuguese; many other nationalities are also represented. The estimated population in 1923 was 68,799. In 1923, 1,025 working permits were issued to children between 14 and 16 years of age.

DEPARTMENT OF HEALTH

The health officer, or superintendent of health, is appointed by the mayor, with the approval of the city council, for a term of one year. There is no board of health or advisory council.

The present health officer has been in office for a year and a half; he is a physician in private practice who devotes about three hours a week to his official duties. The Health Department personnel includes, in addition to the health officer, a full-time clerk, two full-time sanitary inspectors, a part-time city physician, who devotes about three hours a week to communicable disease work, a part-time meat inspector, who gives one hour a day, and a part-time milk inspector who devotes about three hours a day to this work.

The chief activities of the Health Department are limited to nuisance, food and milk inspection, and garbage collection. The expenditure of the Department in 1923 was \$38,652.26, or 56 cents per capita. Deducting \$16,041.50 for hospitals and garbage disposal, the cost is reduced to 19 cents per capita.

Other health activities in the community are divided among various

agencies; vital statistics are in the hands of the city clerk, medical supervision of school children is handled by the Department of Education; tuberculosis, maternity and child welfare service is provided by the American Red Cross, and venereal disease clinics are conducted by the state. A mental clinic is maintained by the Rhode Island Mental Hygiene Society, a private organization.

The work done in connection with the control of communicable disease, one of the chief activities of the Health Department, does not seem to compare favorably with that done in the majority of the cities surveyed. The sanitary inspectors take charge of the instruction of the family, quarantine, the taking of cultures, and release. The laboratory diagnosis is handled by the State Department of Health. The records indicate incomplete reporting of communicable disease, this being particularly true of tuberculosis. It was impossible for the surveyor to obtain the number of cases reported since 1917. The only use made of the records of communicable disease consists of a spot map showing the incidence of scarlet fever and diphtheria. Vaccination is a requirement to attend school. In 1922, there were 492 vaccinations.

Diphtheria antitoxin, smallpox vaccine and anti-tetanic serum are available at the Health Department. Neither diphtheria toxin-antitoxin nor typhoid vaccine are generally distributed. Immunization against diphtheria has been conducted by the State Health Department, and was begun in March, 1923.

The achievement in sanitation, the other chief activity of the Health Department, is such as to place the city among the lowest of the cities surveyed. The chief factors contributing to this position are the inadequate control of the milk supply, and the lack of sewerage connections. Dairy and milk supply inspections are made by the part-time milk inspector. The only information available regarding the numbers of dairy and food inspections is the report of the milk inspector for 1922. This consists of a statement of the number of dairy and store inspections made (215), the number of licenses, and the number of milk tests made (171). The 171 tests recorded do not include bacteriological counts.

It is estimated that only .68 per cent of the dwellings have sewer connections. The sewage from two-thirds of the sewerage system is discharged untreated into the Blackstone River, which is becoming overloaded, and the remainder of the system is connected with the Providence sewers. The control of outside toilets seems inadequate; they are not fly-tight, nor are the contents removed regularly.

THE RED CROSS

The Pawtucket and Central Falls Chapter of the American Red Cross is doing extensive work in connection with tuberculosis, maternity, infant and child hygiene. The service rendered consists of clinics and follow-up work

in the homes by the nursing division of the same organization. The organization of tuberculosis and pre-natal work is such as to place the city among the highest 10 cities surveyed, in these two activities. The nursing division consists of a nursing director, 12 field nurses, and a clerk. In addition to the follow-up work in connection with the clinics, general bedside nursing is handled by the nurses, and work is done for the Metropolitan Life Insurance Company. Pawtucket, Central Falls, and several towns adjacent to them are served. The budget of the nursing division is \$20,300.

Tuberculosis clinics are conducted twice a week, for two hours each, at the Memorial Hospital with a volunteer physician attending. During 1923, 3,797 home visits were made by the full-time tuberculosis nurse provided by the Red Cross Health Center, and 396 patients were observed at the clinic. Cases are hospitalized at the state sanatorium to which 61 cases were sent from Pawtucket in 1923. There are no preventorium beds available, but there are three open-air classes for underweights and pre-tuberculous children in the schools.

The pre-natal clinics are held at the Red Cross Health Center twice a week for two hours each, with a volunteer physician attending. During 1923, 2,767 visits to pre-natal cases were made by the nursing division of the Red Cross, and there was an attendance of 361 at the clinics. About 13 per cent of the total births are in the hospitals, chiefly located in Providence.

Four clinics are held weekly for two hours each in different parts of the city for children under two years of age. In 1923, there was a total attendance of 1,897, and 18,181 home visits were made by the Red Cross nurses. Of this number, 8,484 were made in Central Falls for the State Department of Health.

The Pawtucket Day Nursery has a capacity of 40 children, and an average daily attendance of 32. There are adequate facilities for play. Children of pre-school age are served with a mid-morning and mid-afternoon lunch in addition to the regular hot lunch at noon and are required to have a daily rest period.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs two part-time physicians, a part-time dentist, and two full-time nurses. Medical examination is limited to a single examination of each child once during his school career, and is made when he is admitted to school. Examinations are made by the physicians, assisted by the nurses and teachers, children being examined at the rate of about 60 an hour. It was found impossible to obtain records showing the number of examinations made, the defects observed, and the defects corrected. The annual report of the School Department for 1923 contains no tabulation of work done by the medical staff.

Dental supervision is provided in the first five grades only, and correction of defects is obtained through three dental clinics in the schools and

HEALTH SURVEY OF 86 CITIES

four dental clinics at the Red Cross Health Center. The school dentist is in charge of all the clinics; records are available only of the work done at the Red Cross clinics; these show 1,434 extractions made, 245 cleanings, and 82 fillings.

Only seven of the 24 public grade schools are provided with scales, and children in these schools were weighed and measured regularly until recently. This practice was discontinued in February, 1924. There is no organized course in health education and little is done to correlate this subject with other subjects in the course. A special nutrition class for underweights and pre-tuberculous children has been discontinued. Mid-morning lunch is provided in 12 schools; for those unable to pay assistance is provided by the Parent-Teachers Association; other activities of this association in the field of health have been a safety campaign, providing schools with scales, and equipment for the school dental clinics.

COMPARISON WITH OTHER CITIES

As shown in the chart below, Pawtucket ranks among the middle cities in five of the 11 major activities; it fails to attain this position in four others, and ranks among the upper 29 cities surveyed in two activities. On the basis of achievement in the various activities combined, the city ranks among the lower third.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....	★
Com. Dis. Control	H★		
V. D. Control	O-P	.....	★
T. B. Control	P	.....		★
Pre-natal	P	.....		★
Infant	P	.....	★
Pre-school	P	.....	★
School	E-P★		
Sanitation	H★		
Laboratory	H-O	.....	★
Pop. Health Inst.	P★		

¹See page 273.

To secure a more favorable standing in community health work a number of things are necessary in Pawtucket. In the first place more of the personnel of the Health Department should be on a full time basis. More money should be available for health work. Garbage disposal might better be handled by some other city department. A material increase in sewer connections is needed to do away with the nuisance of privies. These steps together with improvement in the control of the milk supply, more time spent on the individual in the school examinations and the establishment of record systems in a number of lines of work are all desirable.

PERTH AMBOY, NEW JERSEY

Surveyed, April 28th—May 1, 1924

Perth Amboy, located on Staten Island Sound at the mouth of the Raritan River, has an area of 4.3 square miles, with an extended water front along the river and sound. The population in 1920 was 41,707 and the estimated population in 1923 was 45,162. The population includes 36 per cent foreign born, and 1 per cent negroes. The city is largely industrial in nature, as the sound and river cut down its tributary rural area. The Lehigh Valley Railroad has extensive yards and docks for freight shipping. The manufacture of terra cotta, copper, chemicals, women's clothing, asphalt, electric cable and carborundum are among the principal industries.

DEPARTMENT OF HEALTH

A Board of Health, consisting of seven members, is appointed by the mayor. The health administration of Perth Amboy is carried on by a full-time health officer who is a doctor of veterinary medicine. As is the case in New Jersey, the health officer is licensed by the State Department of Health. He is appointed for a term of 3 years, and has already been in office for five years. The budget for the Department of Health amounts to about \$27,500 annually, or 61 cents per capita. Of this sum \$1,964, or four cents per capita is used for the maintenance of the isolation hospital.

The vital statistics, including births, deaths and communicable disease reports, are filed with the Health Department. The clerical work connected with the filing of births and deaths is done by the city clerk, who is deputy registrar, and who has his office in the same building. This relieves the Department of Health of the clerical work without interfering with the effective use of the records. The classification and use of vital statistics in the Health Department of Perth Amboy is not quite as complete as might be desired, or as is found in a large number of other cities. The publication of an annual statement setting forth the vital data of the city would no doubt be a means of increasing the public support of health work.

The personnel of the Health Department consists, besides the health officer, of a part-time physician, devoting his time to maternity and infant welfare work, a full-time dentist doing work for school children, seven full-time nurses, two sanitary inspectors, handling general sanitary complaints, including the inspection of plumbing; one inspector who handles the entire field of food and milk, a laboratory technician, devoting full-time to routine

laboratory service, and two full-time clerks. Four of the nurses devote their time to infant welfare work, two to communicable disease work, including isolation hospital, and one to school work.

Milk consumption in Perth Amboy amounts to about 15,000 quarts a day, or $\frac{2}{3}$ pint per capita. About 90 per cent of the supply is pasteurized and the remainder is certified. Although the provision for the milk control seems entirely adequate, several high bacteriological counts for one dealer brings the average count rather high.

All of the nursing service in Perth Amboy, except that of tuberculosis and school nursing, is carried out by the Health Department. The work in infant welfare is done on a district basis. All of the city is covered except a small prosperous residential area near the center of the city. A regrettable feature of the service is the inadequacy of the medical supervision in the clinics. The number of infants and pre-school children reached is sufficiently large so that with an adequate medical supervision the work would rank as of high calibre. The pre-natal service of the community is handled entirely by the nurses. There is no clinical service, though the need for it is quite apparent. In Perth Amboy there should be no great difficulty in establishing a pre-natal service, the results of which would easily justify its existence. The field has been practically untouched and satisfactory results could no doubt be obtained by extending the medical and nursing service, already operating in the infant group, to include the pre-natal period.

HEALTH OF THE SCHOOL CHILD

Health work in the schools of Perth Amboy showed several indications of growth. Undoubtedly the more rapid development of this work has been held in abeyance by an illness of the superintendent of schools, though he has personally been in favor of increased health activities. The interest of the elementary grade supervisor in health education augurs well for future progress.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	H★		
T. B. Control	P	.....		★
Pre-natal	H★		
Infant	H	.....		★
Pre-school	H	.....		★
School	E	.....		★
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	★		

¹See page 273.

COMPARISON WITH OTHER CITIES

The accompanying analysis of Perth Amboy's relative standing in each of the eleven major health activities indicates the need of focusing public attention upon at least three or four items.

Perth Amboy is held back in the rating for sanitation owing to the relatively small number of dwellings with sewer connections. The absence of venereal disease service and adequate clinical service for pre-natal care is largely responsible for the city's comparative low ranking in these activities.

Popular health instruction should receive more attention and there is probably no other field of service which will eventually bring as great a return upon the money invested. All newspapers, community clubs, churches, schools and other organizations might well be called upon to assist in this service for the general good.

PITTSFIELD, MASSACHUSETTS

Surveyed, June 9-11, 1924

The city of Pittsfield, located at the western extremity of Massachusetts, in the heart of the Berkshires, is an attractive New England community chiefly noted as a residential and recreational center. Its annual music festival attracts cultured people from near and far.

The city has grown very slowly. In 1920 the population was 41,763, and in 1923 the estimated population was 45,239. Of these, 79 per cent were native born whites and 20 per cent foreign born whites. There is no housing problem. The city spreads out into the hills, and has a total of 42 square miles. The residences are almost all of the one- or two-family type and have ample grounds. Because of the large area covered by the city, the number of home visits made in a day by a health worker must necessarily be somewhat smaller than the number made in a more compact community.

Although Pittsfield is not essentially an industrial community, it has a large stationery factory, as well as one of the largest plants for the manufacture of electrical machines and devices, and several small textile mills.

DEPARTMENT OF HEALTH

The Board of Health, consisting of three members, one of whom is a physician, is appointed by the city council for three years, the term of only one member expiring each year. The present health officer is a physician who, previous to his appointment in Pittsfield, was for some time a county health officer in Alabama.

The Health Department is crowded into one room in the city hall. In addition to the health officer the personnel includes two school nurses, one child welfare nurse, one communicable disease nurse, one dental hygienist, one inspector of milk and sanitation, and one inspector of slaughtering, meats and provisions. All are full-time employees. There are also several part-time employees, including four school physicians, a physician at the tuberculosis clinic, and the bacteriologist. The 1923 budget of the Health Department was \$34,665, or 77 cents per capita. On this budget, \$5,500 is paid to one of the local hospitals for the care of cases of communicable disease.

Although Pittsfield, in comparison with other cities of this size, ranks high in its provision for the control of communicable disease and has had no smallpox for more than 10 years, there have been in recent years an

unduly large number of cases of scarlet fever and diphtheria. One diphtheria epidemic was traced to a raw milk supply. There is no bacteriological control of the milk supply; only a small per cent of the cattle are tuberculin tested and only about 30 per cent of the milk supply is pasteurized. While the Health Department has a fairly comprehensive program, as evidenced by the fact that clinics are maintained for pre-natal, infant, pre-school and school work, tuberculosis, and Schick testing and immunization against diphtheria, no branch of the work appears to be very thoroughly organized. Probably not more than 5 per cent of the expectant mothers in 1923 had pre-natal clinic supervision. The infant welfare work, with 100 clinics during the year, had a total attendance of approximately 800 for 1923, or an average of 8 a clinic. It would appear desirable to have physicians in attendance as well as a broader program.

The school medical inspection work, which is also under the Health Department, provides a rapid physical inspection of each child once a year. In a few schools equipped with scales, infrequent weighing and measuring is done throughout the year. A dental hygienist gives attention to the first three grades. Pittsfield is making an effort to do some health education work, but as yet the amount and quality of work being done by different teachers varies greatly.

As compared with school buildings in other cities, there is an inadequacy of lavatory facilities and the usual absence of towels, without which it is difficult for school teachers to inculcate habits of cleanliness in the children.

HOSPITAL FACILITIES

The hospital facilities of Pittsfield are unusually large and satisfactory. The two sanatoria and the summer health camp are adequate for the anti-tuberculosis work. The largest hospital in the city maintains a large outpatient department with ten flourishing clinics. The dental and orthopedic clinics, particularly, are doing excellent work for school children.

One of the clinics at this hospital, financed by the state, provides the only venereal disease service in the community.

VITAL STATISTICS

Births and deaths are reported to the city clerk and communicable diseases to the health officer. The records are fairly well kept, but apparently are not used to the fullest extent in the study of communicable diseases and of infant mortality.

VISITING NURSE ASSOCIATION

The Visiting Nurse Association, with a budget for 1923 of \$11,803, effectively employs five nurses and one pupil nurse to do general bedside care, obstetrical and maternity work, tuberculosis and contagious disease nursing, and the local work for the Metropolitan Life Insurance Company.

During the year, 10,420 visits were made, about 20 per cent of which were free.

CLUBS

The men's clubs of the community are conducting or financing several important voluntary health activities, and may certainly be considered as a valuable potential source of aid for local health work, which the Health Department could profitably use.

CHILD LABOR

Although Pittsfield is not an industrial community, the amount of child labor seems to be unusually large. In 1923, 1,625 children between the ages of fourteen and sixteen applied for working certificates, which were granted in each case.

COMPARISON WITH OTHER CITIES

From the following table, which is basely largely on the rating schedule, it will be observed that for the majority of the eleven major health activities, Pittsfield falls in the middle group of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	O★		
T. B. Control	H-P	.....	★
Pre-natal	H	.....	★
Infant	H	.....	★
Pre-school	H	.....	★
School	H	.....	★
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-O-P	.....	★

¹See page 273.

The school medical inspection work would be improved by devoting more time to each child even though this resulted in reaching a smaller number of children.

Judging from experience elsewhere, it would seem that a city the size of Pittsfield should have a fully equipped public health laboratory. More efficient control of the milk supply and a marked increase in the proportion of milk pasteurized would give Pittsfield greater security against milk-borne diseases.

PORTLAND, MAINE

Surveyed, May 12-17, 1924

Portland, the largest city in the state of Maine, lies on one of the numerous peninsulas jutting from the irregular coast. This peninsula, shaped like a bent finger beckoning to its shores, is less than a mile wide and about $21\frac{1}{2}$ square miles in area. Situated at the head of Casco Bay, it is the gateway to the interior of the state which with its woods, lakes and streams, abounds with summer camps and resorts. This fact, together with the geographic position of the city in relation to other large cities in the States, and in Canada, explains the presence in the city of large numbers of tourists during the summer months.

Almost completely surrounded by water, Portland, a natural deep water port with good rail connections, is a large shipping center. During the winter months, when the St. Lawrence River is closed to navigation, it is one of the important ports for Canadian trade. In addition, the city is the home of several large industrial plants, some engaged in the manufacture of marine hardware, such as pumps, anchors, and so forth, others in the canning of foods, and in the manufacture of wooden and cardboard boxes, and of many other articles.

According to the 1920 census the population was 69,272, of which 19 per cent were foreign born. The estimated population in 1923, was 73,129. The influx of visitors during the summer months is said to double the normal population.

MUNICIPAL GOVERNMENT

Unlike the other New England cities surveyed, Portland's executive is a city manager. The present form of municipal government, consisting of a city manager and a council of five, was adopted about two years ago.

DEPARTMENT OF HEALTH

A full-time health officer is appointed by the council, for a term determined by it. The present health officer is a physician who has been in office for eight years. During this period he has made marked improvements in the organization and accomplishment of the Department. Worthy of mention has been the establishment of an efficient diagnostic laboratory, and the introduction of public health nurses into the personnel of the Health Department. In addition to the health officer, the Department consists of 11 public health nurses, one of whom is a supervisor, one

quarantine officer, one laboratory technician with one assistant, ten inspectors, three of whom are food inspectors, and four clerks. In addition to the personnel listed, all of whom are full-time, there is one part-time assistant to the nurses. The time of the nurses is distributed among communicable disease and tuberculosis work, maternity and infant welfare, school hygiene, and venereal disease work. The budget of the Health Department, including the isolation hospital, was approximately \$47,000, or 64 cents per capita.

While communicable disease cases are reported to the Department of Health, the recording of births and deaths, and the issuance of burial permits is in the hands of the city clerk. The information revealed by these records is of great value to the health officer, and should be compiled and analyzed in his department.

While the inspection of the dairies and other food handling establishments is satisfactory, and laboratory control of milk is adequate, only 72 per cent of the milk supply is pasteurized, and no certified milk is obtainable.

A clinic is conducted by the Department of Health at the Portland dispensary once a week for one hour, with a volunteer physician, two public health nurses, and a social worker attending. Due to the curtailment of the clinic by the Bowdoin Medical College, the clinic was closed for about a year and a half, during the period January 1922 until August 22, 1923. With only 18 new patients observed in 1923, and a total of 70 visits to the clinic, it is evident that the tuberculosis problem is not being effectively met. The record of cases is evidently not complete, since only 48 cases are recorded, as against 43 deaths reported. More effective record-keeping, stimulation of the attendance at the clinic, and possibly increasing the number of clinics to two a week, and an increase in the number of home visits made by the nurses, would do much to improve the control of the disease.

HEALTH OF THE CHILD

Portland provides no clinic for pre-natal care, the only service rendered consisting of home visits by the public health nurses of the Health Department. Judged from the standpoint of the number of expectant mothers reached by the service, or the number of pre-natal visits compared with the total number of births in the city, it seems that the work done is inadequate. Only 579 pre-natal visits were made during 1923, when the total number of births was 1,695. The nursing service provided is a good beginning. A further step in the right direction might be taken by the establishment of a pre-natal clinic under proper medical supervision, provided with adequate follow-up work in the home.

In favorable contrast with Portland's pre-natal service is the infant welfare service, with the three clinics held weekly by the Health Department, and an additional one maintained by the Baby Hygiene and Child Welfare Association. The attending physicians are volunteers, and the nurses at all four clinics are public health nurses of the Health Department. They also do the home visiting.

No service is provided for the health of the child after he reaches the age of two until he is old enough to enter school, and even then, very little attention is paid to his physical well being. There is no medical inspection of school children; there are no school nurses, the physical inspections being made by Health Department nurses twice a year. The children are not weighed and measured, except in two schools in which open air classes are held. However, the dental clinic operated by the Red Cross in the Children's Hospital is worthy of special mention and commendation. It is a municipal clinic financed and supported largely through funds appropriated by the city. Clinics are held daily for six hours each day. The efficient record-keeping, the volume of work done, the effective method of follow-up, insuring attendance at regular intervals, thus stressing the preventive side of dentistry rather than the reparative, are noteworthy.

DISTRICT NURSING ASSOCIATION

The Portland District Nursing Association, with headquarters at the Maine General Hospital, is a small organization with a staff of two graduate nurses, and two pupil nurses. In addition to obstetrics, the nurses take care of surgical and medical cases. The annual budget of the association is only \$3,000. The organization seems small for a city as large as Portland.

COMPARISON WITH OTHER CITIES

The achievement of Portland in the 11 major health activities compared with that of the other 85 cities surveyed, is shown in the table below. Portland ranks among the upper cities in five activities, among the middle group in five others, and among the lower in the only field which it has altogether neglected, namely pre-school child hygiene.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....	.....	★
Com. Dis. Control	H	.....	.....	★
V. D. Control	H	.....	★
T. B. Control	H	.....	★
Pre-natal	H	.....	★
Infant	H	.....	.....	★
Pre-school	★		
School	H	.....	★
Sanitation	H	.....	.....	★
Laboratory	H	.....	.....	★
Pop. Health Inst.	H-P	.....	★

¹See page 273.

For the best utilization of funds at the disposal of the Health Department it would seem that some of the emphasis now placed on sanitary inspections might profitably be transferred to the various educational clinics dealing with pre-natal and child hygiene.

PORTSMOUTH, VIRGINIA

Surveyed, May 12-17, 1924

Portsmouth, the third largest city in Virginia, is located near the mouth of the Elizabeth River, opposite Norfolk and on the port of Hampton Roads. It is flat, six square miles in area, and has the appearance of a smaller city because of the small business district. Many Portsmouth residents are engaged in business in Norfolk.

The most striking feature of the city is the great Navy Yard and the Naval Hospital. Portsmouth is a large distributor of sea foods, coal, lumber, fertilizer and tobacco. It is well equipped with railroads and steamship lines. The Navy Yard furnishes the principal business of the city.

The population was 54,387 in 1920; 43 per cent of these were negroes and 3 per cent foreign born whites. The estimated population in 1923 was 57,341.

DEPARTMENT OF HEALTH

The Board of Health consists of one layman, one physician, and the city manager. The full-time health officer is appointed by the city manager for an indefinite term. The present health officer is a physician with several years experience in public health work and in the army. Other members of the staff are three nurses, two part-time physicians, a bacteriologist and one assistant, three sanitary inspectors, one food inspector, and a clerk. This staff provides for the keeping of vital statistics, the control of communicable disease, and in cooperation with a private agency the control of tuberculosis, food and sanitary inspection, laboratory work, and some district nursing.

The Health Department records are well kept, excellent in detail and properly indexed for reference.

A nurse visits cases of communicable disease, gives verbal instructions and leaves circulars. The Health Department laboratory furnishes ample facilities for diagnostic work. Free immunization is available for diphtheria, typhoid fever and smallpox. In 1923, 887 persons were vaccinated against smallpox and 282 immunized against diphtheria.

The Health Department appropriation for 1923 was a little over \$35,000, but over \$10,000 of this was expended for a scavenger service. About 70 per cent of the dwellings in Portsmouth are sewerred. There are a large number of outside toilets and cesspools and a few septic tanks. The Health Department is required to move the contents of all of these with their

scavenger service. Exclusive of this service the health budget is probably not over \$25,000, or about 44 cents per capita.

HEALTH OF THE SCHOOL CHILD

Until shortly before the survey, the Department of Education had employed two part-time physicians and three full-time nurses to carry on the school medical inspection work. One of the physicians died about two months before the survey and the vacancy caused by his death had not yet been filled. All school children are given a rapid physical inspection annually by the physicians. The nurses inspect eyes, ears, and noses, and do the home follow-up work to secure correction of defects. They also weigh the children once a month. There are no school dental clinics and no open-air classes, although there are nutrition classes for underweights. The Parent-Teachers Association supplies milk for these classes.

The school buildings are not of the best modern construction, and there was a notable lack of fire-escapes and fireproof stairways. The playground space for each building is limited and there is very little playground apparatus. The sanitary conditions of the buildings were good at the time of the survey. Not a great deal has been done so far in the field of health education, although a course has been outlined and the physical director has undertaken to carry it out.

PRIVATE AGENCIES

The Portsmouth Tuberculosis Association maintains a clinic in cooperation with the Health Department. The Association supplies the physician and the Health Department the nurses. The Association also gives economic relief to those families in need. There were 729 persons cared for in the clinic during 1923, and 3,739 home visits were made.

The City Mission Board, supported by a group of Methodist churches, maintains a clinic for infants and children of all ages under twelve years. There are two clinics a week, with a physician and a nurse in attendance. The nurse devotes the rest of her time to home visiting. There is no special pre-natal service although there were 217 pre-natal visits made in 1923. Further expansion of the child welfare work of this board has been prevented because of lack of funds.

MALARIA PREVENTION

Portsmouth has a malaria problem, inasmuch as the surrounding country is favorable for the production of *Anopheles* mosquitoes. The United States Public Health Service began anti-malaria measures during the war which have since been carried on by the city engineering department. It is estimated that the possible drainage work is about 30 per cent completed.

HEALTH SURVEY OF 86 CITIES

COMPARISON WITH OTHER CITIES

Portsmouth, as will be seen by the accompanying chart, achieves a place in the upper third of cities in five of the eleven major public health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	H★		
T. B. Control	H-P	.....		★
Pre-natal	P★		
Infant	P	.....		★
Pre-school	P	.....		★
School	E★		
Sanitation	H	.....	★
Laboratory	H	.....	★
Pop. Health Inst.	H-P	.....		★

¹See page 273.

It would seem desirable that the Health Department should cooperate with the Mission Board in the further development of the child welfare work begun by that organization, and that a pre-natal program should be developed along with it. The addition of several public health nurses to the Health Department staff would greatly increase the educational work which that department is able to do.

The school medical program could be improved by the addition of a dental clinic and by a more detailed physical examination by the physicians, including examination of the heart and lungs.

PUEBLO, COLORADO

Surveyed, April 28—May 3, 1924

Pueblo, the second largest city in Colorado, lies just east of the Rocky Mountains on a large plateau. The Arkansas River flows through the center of the city.

In 1921 this river overflowed and broke through dikes, with loss of life, and damages amounting to several million dollars occurred. Now more than five million dollars are being spent to protect the city against a repetition of this disaster. There is at present some depression because of flood losses and high taxes incident to the improvement.

The industrial importance of Pueblo is greatly aided by its excellent railroad facilities. Iron and steel plants and smelting are the most important industries. Others include meat packing, brick and tile, saddles, wire fence, agricultural implements, and oil, which has developed rapidly in the last few years. The excellent irrigated land adjoining Pueblo produces a variety of fruit and vegetables.

Medium sized one-family houses predominate in the community. There are 31 parks but no supervised playgrounds. The population in 1920 was 43,050, with 3 per cent negroes and 17 per cent foreign born. The estimated population in 1923 was 43,519.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The health officer, a physician who devotes about half-time to his official duties, is a civil service appointee who has held office since 1918. He is assisted by a clerk and statistician, a food inspector, two sanitary inspectors, a communicable disease nurse, a quarantine officer, two clerks and a bacteriologist, all full-time employees; and a part-time bacteriologist and a part-time veterinarian. The health appropriation for 1923 was \$18,880 or about 43 cents per capita. The budget for 1924 was increased by about \$10,000, however, so that several pieces of new work might be undertaken; notably, something definite in pre-natal supervision and home teaching service for infants and young children.

Judging by the records available, the infant mortality rate for Pueblo has been high and has fluctuated a good deal. Rates for the last four years available are:

1920.....	223
1921.....	126
1922.....	150
1923.....	120

Local officials feel that a large part of this high rate is due to excessive mortality among Mexican babies. As far as could be determined by the surveyor a good many births are still unreported.

Deaths from communicable diseases have not been unusually high with the possible exception of tuberculosis. Until the last two years the number of deaths from tuberculosis exceeded the number of cases reported.

It is not required that children be vaccinated before they may attend school. Educational publicity regarding toxin-antitoxin immunization against diphtheria was begun in the fall of 1923, but it was not possible to obtain records of the number immunized.

CHILD WELFARE ASSOCIATION

The Child Welfare Association ranks as a sort of semi-official agency. Most of its funds are derived from the Community Chest, but the salaries of its director and its nurses are paid by the city. Six clinics a week are held for children under 16 years of age. About 5,000 children are examined annually. Some of the funds are used for providing milk for undernourished children, and for paying clinic and hospital fees for children taken to these institutions.

HEALTH OF THE SCHOOL CHILD

There are two departments of education in Pueblo. The district in the south side of the city includes a large rural section. This district maintains a full-time nurse and a part-time dentist. The health teaching of this district is somewhat desultory. In some schools individual teachers are active and some good poster work is being carried on. The nurse has little time for anything except inspection work and following up defects. Some health crusade work was done at the instigation of the tuberculosis nurse.

In the north district a nurse has been employed as teacher of hygiene in the high school with the understanding that she also do nursing inspection and follow-up in the grades. There is no school physician in either district. The percentage of corrections of physical defects obtained by the nurse is rather high.

All children are weighed and measured once a month. Undernourished children to the number of 946 received special attention during 1923 under supervision of the school nurses. Milk lunches are available but there are no open air classes.

The surveyor was unable to obtain any accurate figures on the amount of child labor. Physical examinations are not given children who wish to obtain employment.

PRIVATE AGENCIES

The Public Health Association confines its interests entirely to tuberculosis control. Plans for a county tuberculosis hospital were given a set-back by the great flood, but will probably be pushed again soon. The clinic cared for 525 patients in 1923, and 1,022 home calls were made by the nurse. These numbers do not seem large in view of the fact that Pueblo is in the district often visited by tuberculous persons in search of a healthful climate.

The Red Cross, since the flood, has developed into a general relief agency for the community. Their one nurse does bedside service and gives some lectures on home hygiene to school children and mothers.

PUBLIC UTILITIES

The water supply, taken from the Arkansas River, is treated by sedimentation and chlorination, and is apparently safe for drinking purposes. But it is not clear and not esthetically attractive. Many of the citizens buy mineral water.

About 60 per cent of the milk supply is pasteurized. Laboratory inspection does not seem adequate as only 396 samples of milk were analyzed during 1923. The city is fairly well sewered but the sewage is dumped untreated into the Arkansas River, as is also the contents of privy vaults.

COMPARISON WITH OTHER CITIES

The accompanying table shows that for five of the eleven major activities Pueblo falls into the upper third of the 86 cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	★	.....
V. D. Control	O	.....	.....	★
T. B. Control	P	.....	★	.....
Pre-natal		.....★	.....	.....
Infant	O-P	.....	★	.....
Pre-school	O-P	.....	.....	★
School	E	.....★	.....	.....
Sanitation	H	.....	★	.....
Laboratory	H	.....	.....	★
Pop. Health Inst.	H	.....	.....	★

¹See page 273.

The addition of a physician to the school health staff and the organization of a more thorough course in health education would lift the Health of the School Child from the lowest group.

There are at present six public health nurses attached to four different official and private agencies in Pueblo. The assembling of these nurses into one group under one supervisor and the districting of work would undoubtedly eliminate much overlapping of effort and loss of time.

QUINCY, MASSACHUSETTS

Surveyed, March 10-15, 1924

Quincy is located on Boston Bay, 8 miles north of Boston. The city stretches 23 miles along the waterfront, and covers an area of approximately 17 square miles; it is bordered on the north by the Neponset River, and on the south by the Fore River; about 3 miles to the west lies the picturesque reservation of Blue Hills. To a large degree the city is a residential suburb of Boston, and is composed of a number of settlements or villages. There are mainly one and two-family houses.

The city was settled in 1625, was separated from Braintree in 1792, and was chartered in 1888. It was long unimportant as a manufacturing center, with the exception of the industry of granite quarrying, which was first started in 1825. Manufacturing has rapidly increased in importance since 1900. Besides the quarries, iron and steel ship building is an important industry. Other articles manufactured are rivets and studs, scales, telephones, gearing, foundry products, paint, varnish and engines.

The population in 1920 was 47,876 of which 29 per cent was foreign born. In 1923 the estimated population was 53,368.

DEPARTMENT OF HEALTH

The city is governed by a mayor and a council of nine. The mayor appoints the commissioner of health. His term is the same as that of the mayor, which is two years. The present commissioner, who has been in office for a year, is a physician in private practice who devotes about two hours daily to his duties in the Health Department.

In addition, the personnel of the Health Department includes a superintendent, a clerk, a sanitary inspector, a milk inspector, a foreman of ash and garbage collection, a plumbing inspector, an inspector of meats and provisions, an inspector of animals and slaughtering, a dispensary physician, a child welfare physician, a venereal disease physician who is also bacteriologist, and three public health nurses, one for communicable disease, one for tuberculosis and one for child welfare.

The expenditure of the Health Department for 1923 was \$111,958.80. Deducting \$73,523 for garbage collection, which is essentially not a health problem and is generally handled by some other city department in cities of this size, the cost per capita is 72 cents.

The Health Department engages in all of the major health activities with the exception of the registration of births and deaths, which is handled by the city clerk, and the supervision of the health of the school child, for which the Board of Education is responsible.

Communicable disease cases are reported to the Health Department. Reporting seems fairly complete and the records are used in the keeping of spot maps of several contagious diseases; and a weekly chart of cases. The contagious disease nurse devotes all of her time to communicable disease work. Free immunization is readily obtainable against smallpox, diphtheria and typhoid. Vaccination against smallpox is required before children may attend school. Daily inspection is made of school children by the teachers to detect contagion. Through the activity of the State Health Department and the Schick clinics held at the dispensary twice a week since October 1923, 330 children received diphtheria immunization that year.

The report for 1923 of the venereal disease physician covers the months from March to December inclusive and shows an unusually low attendance at the clinic. Only 18 patients attended the clinic which is conducted at the dispensary once a week for three hours, and a total of 152 visits were made.

The tuberculosis clinic is conducted at the dispensary once a week for one hour by the dispensary physician, with follow-up in the home by the tuberculosis nurse. The attendance for 1923 was 425 and 570 home visits were made by the nurse. A clinic is also conducted for undernourished and underweight children in connection with the tuberculosis clinic. During 1923 there was an attendance of 403. Milk is distributed until weight increases are noted and examinations are made and treatment given for pre-tuberculous conditions. Cases are hospitalized for the most part in the state and county sanatoria. There were 59 cases of tuberculosis in these institutions.

A large volume of work is done in the field of child welfare by a staff consisting of one part-time physician and one full-time nurse, who gives part of her time also to the Schick clinics. Clinics are held for infants and pre-school age children. The pre-natal service consists merely of visits to the home by the nurse. During 1923, 115 such visits were made; evidently only a small fraction of the total 1,225 births recorded are reached by even this limited service. Better provision is made for child care, infant and pre-school. Four clinics are conducted, each being on different days once a week for three hours, in four different wards of the city. The physician is in attendance only at the clinic held at the dispensary. During 1923 the attendance at this clinic alone was 1,517. The other three clinics are held in churches, and are conducted by the nurse. Babies who are not progressing satisfactorily are referred to the dispensary clinic. Home visiting is also done by the nurse in connection with the clinics. During 1923, 395 such home visits were made.

Sanitary inspections, food, dairy and milk inspections, and laboratory control of the milk supply are handled by the Health Department. During

1923, 1,095 sanitary inspections were made. There are about 650 privy vaults in the city, which cannot be abolished until the public sewerage system is extended. In 1923 only about 62 per cent of the dwellings were connected to the metropolitan sewerage system. There were 609 food inspections, exclusive of milk. Dairies are inspected and scored. An ordinance recently passed and effective October 1924, requires pasteurization of all milk not obtained from tuberculin tested cows; in 1923, only about 64 per cent of the supply was pasteurized. The laboratory tests and bacteriological counts were made by the physician doing the venereal disease work, but neither a special check nor special field inspection are made of supplies having high counts. The laboratory work has been limited to the laboratory control of milk and ice cream since March 1923, and about four hours a week are devoted to it. Proximity to the state laboratory in Boston probably contributes to the lack of development of a laboratory in Quincy.

HEALTH OF THE SCHOOL CHILD

The staff provided by the Department of Education for medical examination of school children consists of a half-time physician, three full-time nurses, a dentist and a dental hygienist. Dental clinics are conducted in two of the schools. The children are examined annually by the physician assisted by the nurses and teachers, 12 to 15 children being examined per hour. Home visiting is done by the nurses in connection with the correction of physical defects.

Height and weight measurements are not included in the routine examination, nor are they made regularly by the teachers. In one of the six schools visited a mid-morning lunch of cocoa, for which milk is substituted in warm weather, is served with crackers. There is an organized course in hygiene which is started in the first grade. A health crusade which was started in the schools has been discontinued. In noting the sanitary conditions in the six schools visited, it was observed that three buildings had wooden stairs, and were not equipped with adequate fire escapes.

PRIVATE AGENCIES

The health work being done by the private organization is chiefly educational. There are several active women's clubs interested in the problem of health. The Quincy Women's Club supports the Visiting Nurse Association, which consists of five nurses, including a supervisor.

COMPARISON WITH OTHER CITIES

Quincy ranks among the upper 29 cities in three of the 11 major health activities, among the middle cities in five, and among the lower cities in three activities.

None of these activities is entirely neglected although attendance at some of the clinics is small.

It is this fact which is responsible for the low rating in venereal disease control. Sanitation is ranked low by reason of the number of dwellings without sewer connections in comparison with other cities. The fact that much of the milk supply is not pasteurized is also a factor.

ACTIVITIES	CONDUCTED by . . .	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	H★		
T. B. Control	H	.....	★
Pre-natal	H	.....	★
Infant	H	.....		★
Pre-school	H	.....		★
School	E	.....	★
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-O-P	.....	★

¹ See page 273.

RACINE, WISCONSIN

Surveyed, May 29—June 1, 1924

Racine is located on the shores of Lake Michigan, between Milwaukee and Chicago, and is the trade center for a large and rich farming area. The population at the 1920 census was 58,593, and the 1923 estimate is 64,393. About 28 per cent are foreign born. The original stock of the city was Scandinavian and this group still represents a fairly large proportion.

Racine has 250 factories representing a wide variety of industries, chief among which are automobiles and agricultural implements. The city enjoys the reputation of paying good wages and the result is evident in a more than usually well kept residential district, with its predominance of private homes. There are ten city parks with an area of 230 acres, beautifully wooded and well-developed. A municipal golf course and a bathing beach on the shore of Lake Michigan provide recreation.

DEPARTMENT OF HEALTH

The city government is in the hands of a mayor and 15 aldermen. The mayor appoints three aldermen each year to act as a Board of Health; they in turn appoint the health officer.

The present health officer is a physician, formerly epidemiologist of a large Wisconsin city, young, alert, and interested in keeping up with modern public health developments. In addition to his other duties, the health officer also supervises garbage collection, and has recently been appointed overseer of the poor. The health officer is assisted by a part-time physician who acts as deputy health commissioner in the absence of the health officer. He also assists in confirming diagnoses of communicable diseases, in immunization activities and to some extent, in administration. Another part-time physician conducts the venereal disease clinic. A part-time dentist maintains a dental clinic for indigent school children. Six nurses do communicable disease, tuberculosis and school nursing. There are two full-time clerks, a full-time food and milk inspector, and a part-time laboratory worker.

The venereal disease nursing service is handled by a state nurse, who spends two days a week in Racine, working under the direction of the local health officer.

The budget of the Health Department for 1923 exclusive of communicable

disease, hospital and garbage collection, was \$29,240 or 45 cents per capita.

Excellent provisions are made for the care of communicable disease. Spot maps are kept in the Health Department and a thermometer chart shows the daily communicable disease case rate. Nurses visit cases and fill out epidemiological charts. One unusual feature of the nursing service is the provision for administration of antitoxin by Health Department nurses on the calls of local physicians. An immunization clinic is conducted weekly for Schick tests, toxin-antitoxin and smallpox vaccination.

A four hour tuberculosis clinic is conducted twice a month by a local physician and a specialist from Milwaukee. The county runs a sanatorium, with a capacity for 50 beds, to which city cases may be admitted. The probate judge decides whether or not a charge shall be made.

Excellent progress has been made in the last few years toward obtaining a thoroughly satisfactory milk supply. About 95 per cent of the milk is pasteurized and the per capita daily consumption is about 1.34 pints, which is very much higher than the average for the United States.

The Health Department is not only actively engaged in preparing health education bulletins and distributing those of the state, but it has succeeded in obtaining the cooperation of local newspapers and many clubs in spreading health information by means of literature, exhibits and talks. One club has supplied the public library with books on health.

HEALTH OF THE SCHOOL CHILD

There is no physical examination of school children by a physician. All children are weighed and measured once a year by the Health Department nurses. Those children who are underweight are weighed every two months and in addition are inspected by the nurses. Nurses also inspect any other children whom the teachers refer to them. A visiting teacher does home visiting to those children having physical defects. Seriously undernourished children are referred to the tuberculosis clinic and their parents are urged to be present at the examination. An open air class is provided for these children.

Hygiene is taught in the fourth, fifth and sixth grades and some effort is made to correlate it with other subjects, but so far health education in the schools has not progressed as rapidly as the general health education program of the Health Department.

WATER SUPPLY

The city has realized that there is some danger of contamination of the water supply, owing to the fact that the city sewage is emptied into the lake within about three miles of the water intake. An adequate filtration plant is now in the process of construction.

PRIVATE AGENCIES

Infant and pre-school clinics were begun two years ago by the American Red Cross and last year were financed from the Community Chest. Two clinics a week are held at which physicians give services to infants and children under twelve. The Woman's Club and the Junior League are much interested in promoting the work of these clinics, but the work is still so new that the attendance has not been as large as might be desired. A pre-natal clinic had not yet been organized at the time of the survey.

COMPARISON WITH OTHER CITIES

The accompanying table shows the relative position of Racine with the other 85 cities in regard to the 11 major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	H-O★		
T. B. Control	H-P	.....		★
Pre-natal	P★		
Infant	P★		
Pre-school	P	.....	★
School	H★		
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-O-P	.....		★

¹See page 273.

All of the activities in which the Health Department has either a complete or a co-operative interest fall in the upper or middle third of the 86 cities, with the exception of the work for the health of the school child. Owing to the lack of facilities for medical examination by a physician and follow-up and correction of defects, this activity falls into the third class.

The clinics for pre-natal, infant and pre-school child care, begun by a private agency, should be further developed. With the present forward-looking Health Department, it would probably be desired to have these clinics eventually come under the supervision of this Department.

ROANOKE, VIRGINIA

Surveyed March 9-15, 1924

Roanoke is located in the west central part of Virginia, on the Roanoke River, and lies in the valley of the Blue Ridge and Allegheny Mountains. The city has good transportation facilities, being served by two main railway lines and several trunk divisions. Three colleges for women and one for men are located in the city.

The chief industries are the manufacture of locomotives, cars, bridge and structural steel, artificial silk, foundries, flour and mill feed, cotton twine and cans; there are about 80 industries in all. The city is a gateway to the coal fields of Virginia and West Virginia. It is the center of an extensive agricultural and stock raising section, and is a market for the products of the district, which is also important as a tomato canning region.

The population in 1920 was 50,842 of which 2 per cent were foreign born, and 15 per cent were negroes. The estimated population in 1923 was 55,502. Roanoke was founded in about 1852, and chartered as a city in 1884. It is 9.6 square miles in area. The prevailing type of dwelling is the single family frame house.

DEPARTMENT OF HEALTH

The municipal government consists of a city manager and a council of five, the chairman of which is the mayor. The Board of Health consists of five members appointed by the council. The health officer is appointed by the city manager and the Board of Health for an indeterminate period. The position is a full-time one.

Since November, 1910, the position of health officer* has been held by a capable and efficient physician with considerable experience in public health work. He also holds the position of registrar of vital statistics.

Other personnel in the Health Department in 1923 included the following, all of whom were full-time employees: a clerk, a stenographer, a sealer of weights and measures, a dairy and food inspector, two sanitary officers, one of whom is city scavenger, a quarantine nurse, a maternity and infant welfare nurse, and a janitor. The total appropriation of the Department for that year was \$24,371. Deducting \$5,596 for scavenger service and com-

* The health officer in office at the time of survey, resigned October 1, 1924, to become Director of Public Welfare in Richmond, Virginia.

municable disease hospital expense, for comparison with other cities, the per capita cost was 34 cents. The appropriation recommended for 1924 was increased to \$31,576, and provided for the addition to the Health Department staff of a laboratory worker, an assistant food inspector, and a nurse.

COMBINED ACTIVITIES OF THE HEALTH DEPARTMENT, THE VISITING NURSE ASSOCIATION, AND THE ROANOKE GENERAL HOSPITAL

There is a close relationship and marked cooperation among these two private organizations and the Health Department. The offices of the Visiting Nurse Association, and a dispensary conducted by it, are in the City Hall, as are those of the Health Department. The health officer is president of the Roanoke General Hospital Board, an arrangement which facilitates the combined functioning of the city Health Department and the hospital.

The Visiting Nurse Association, a private organization, consists of five nurses; one is supervisor, one is assigned to tuberculosis work, and the other three do generalized nursing. The 1923 budget was \$8,676. In 1923, clinics were conducted by the Association at the dispensary for tuberculosis, venereal disease, pre-natal cases, infants, and pre-school age children. The physicians (some of whom were volunteer, and others paid) were furnished by the Health Department, and follow-up work was done by the nurses of the Association, and also by the Health Department nurse. The records for the various clinics are incomplete, and accurate figures showing the work done in 1923 are not available.

The Roanoke General Hospital, one of the six hospitals in the city, is a private one receiving a small subsidy of \$4,000 from the city. By a recent arrangement, all of the clinics previously conducted by the Visiting Nurse Association will be held at the hospital under the supervision of the Health Department. The physicians will be furnished by both the hospital and Health Department, and the nurses assisting at the clinics will be furnished by the hospital. The home visiting will be carried on by the Visiting Nurse Association, assisted possibly by the Health Department nurse.

OTHER ACTIVITIES OF THE HEALTH DEPARTMENT

In addition to the activities mentioned above, in which the Health Department engages with the cooperation of private agencies, it is solely responsible for vital statistics (indirectly, since the health officer is also registrar), the control of communicable disease, sanitation, food and milk control, and the laboratory work.

No annual report is published by the Health Department. However, other methods used to disseminate health information include the publication and distribution of health pamphlets on venereal disease, communicable disease, infant care, and so forth, newspaper publicity of the health situation in the community, public lectures and health exhibits.

Vital statistics are well kept; information is up-to-date and easily accessible.

Records of communicable disease are readily available for all years since 1910. A spot map and a table are kept showing occurrence of various infectious diseases. The full time of one nurse is assigned to communicable disease; there are specialists available for diagnosis in doubtful cases. Children must be vaccinated before they attend school. Immunization against smallpox, typhoid and diphtheria are readily obtainable. An effort is being made to promote the use of toxin-antitoxin.

Milk supply supervision seems to be unusually good. About 0.8 of a pint of milk is consumed daily per capita. Practically all of the milk supply comes from tuberculin tested cattle. A score card is used in connection with dairy inspection. About 99 per cent of the supply is pasteurized; the average monthly bacteriological count of raw milk is 300,000, and of pasteurized milk is 40,000.

The public water supply, the main sources of which are springs and impounded surface water, is almost universally used. The impounded water is stored, and the other portion is treated with chlorine. The public water supply is under laboratory control, and seems to be of satisfactory quality. There are about 50 private wells in the city.

Sewer connections are required where possible, and 95 per cent of the dwellings are so connected. Sewage is discharged into the river, untreated. The Department of Health exercises control over outside toilets, the majority of which are fly tight and have contents removed regularly.

HEALTH OF THE SCHOOL CHILD

The staff provided by the Department of Education for the medical supervision of school children consists of one part-time physician giving two hours a day, one full-time white nurse and one full-time colored nurse. Several colored physicians volunteer their part-time services for the examination of colored children. An attempt is made to have each child examined annually by a physician. The nurse assists by making vision tests and keeping the records. Examinations are made at the rate of about 15 to 20 an hour; only underweight children have heart and lungs examined with a stethoscope. Dental inspection is made by a dentist. A dental clinic, which has recently been inaugurated in the schools, is partly supported by the Red Cross.

Height and weight measurements are made annually by the nurse, who carries scales from school to school, as very few of the buildings are equipped with them. Mid-session milk is served in three schools. There is an organized course in hygiene; health posters were being made in one of the 11 schools visited. The sanitary condition of the schools visited was good in general, with the exception of the toilet rooms, which did not seem clean in five of the schools. There are seven playgrounds other than school, in the

community, six for white and one for colored children. Each has a variety of equipment, and is supervised by a playground director. There are also six parks, five for white and one for colored.

COMPARISON WITH OTHER CITIES

Roanoke ranks among the upper 29 cities surveyed in four of the 11 major activities, among the middle 29 cities in five, and among the lower group in two activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	H-P-	.....	★
T. B. Control	H-P★		
Pre-natal	H-P	.....	★
Infant	H-P★		
Pre-school	H-P	.....	★
School	E	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

The Health Department has a wide program, embracing all the major health activities in the community with the exception of the medical supervision of school children. A cooperative spirit and close relationship exists between the Health Department and the private health agencies. The recent organization of the common working plan will probably increase the efficacy of work done in the fields in which their efforts are combined.

ROCKFORD, ILLINOIS

Surveyed, May 2-7, 1924

Rockford is located in a rich agricultural region about 90 miles northwest of Chicago. It is the second industrial city in Illinois. The volume of its products is greater than that of any other city of the state except Chicago. There are about 500 establishments manufacturing a wide variety of products. The city has grown steadily from 11,049 in 1870 to 65,651 in 1920 and an estimated population of 72,419 in 1923. Foreign born, largely Scandinavian, constitute 26 per cent of the population. The city is unusually well equipped with large parks and playgrounds.

DEPARTMENT OF HEALTH

City business is administered by a mayor and council. A council health committee of five laymen pass ordinances pertaining to health. The Board of Health consists of the mayor, the chief of police and the health officer. The present health officer is a physician, efficient and well qualified to administer the Health Department. He is assisted by a nurse for communicable disease and one for venereal disease, a trained laboratory technician, four food inspectors, a quarantine officer and two clerks, all full-time employees; and three part-time physicians for tuberculosis and venereal disease clinics. The budget for 1923 was \$31,309 or about 36 cents per capita. Additional special funds include \$34,200 for the tuberculosis sanatorium, \$2,040 for public comfort stations supervised by the Health Department, and \$24,720 for garbage collection.

Included in the activities of the Health Department are the control of communicable diseases, tuberculosis and venereal diseases, food and sanitary inspection, and vital statistics. The Health Department has not developed clinics to any great extent, due it is said to the feeling that the medical profession might consider it a step toward state medicine. The city and county together maintain a tuberculosis sanatorium, managed by a tuberculosis specialist, who conducts clinics twice a week in the city. There were 402 patients who attended these clinics in 1923.

Two part-time physicians conduct six clinics weekly for venereal diseases. A full-time nurse assists at the clinic and does the necessary follow-up work. There were 1,544 visits made to the clinic in 1923.

Compared with many other cities of the same size the efforts of Rockford for the control of communicable disease are above the average. There

is a well equipped diagnostic laboratory, and a full-time nurse who gives instructions in homes where communicable diseases exist. All smallpox and typhoid contacts are immunized, but no effort is made through vaccination clinics to build up a body of protected citizens. Cooperation between the schools and the Health Department, in the matter of reporting cases of contagion in school children might be improved.

The bureau of vital statistics is part of the Health Department. The use made of the records obtained seems to be well above the average. In the 1923 report of the Health Department there are 26 tables dealing with births and deaths and nine with communicable diseases. Spot maps of the communicable diseases are kept in the offices of the Department.

HEALTH OF THE SCHOOL CHILD

The school medical inspection is under the direction of an able physician who realizes that it is impossible for one man to give thorough physical examinations to all the school children. He has therefore, concentrated his efforts on those participating in athletics and those who are 7 per cent or more underweight. In addition, the school nurses weigh and measure all children twice a year, and all underweight children monthly, and give the children a rapid physical inspection twice a year. Later they send to parents notices of physical defects found. The school dentist spends four half-days a week making examinations of the teeth of children and one half-day in doing corrective work for children unable to pay. There is also a psychiatrist who spends two afternoons a week examining problem cases referred by teachers.

All schools are equipped with scales and milk is available at cost. About one-third of the school children drink milk at the morning lunch hour. There are also open air classes for underweights and for cases of incipient tuberculosis.

The Visiting Nurse Association, with a budget of \$19,661 for 1923, employs a superintendent and nine nurses, one full-time clerk and one part-time clerk. The association handles the nursing in connection with the tuberculosis clinic, does the nursing for the Metropolitan Life Insurance Company, conducts three infant welfare clinics, and during 1923 started an obstetrical service. The three infant welfare clinics cared for 735 children under two years of age during 1923. There is no pre-natal clinic, but 578 pre-natal visits were made by the nurses during 1923.

HEALTH COUNCIL

The Rockford Health Council, an organization of persons interested in and participating in health activities of the city, meets once a month. The organization is composed of the school physician, the Boy's Club, the Y. W. C. A., the director of high school athletics, the tuberculosis nurse, the

school nurses, the athletic director of one of the churches, the Visiting Nurse Association, the Health Department, the professor of sociology, at Rockford College, and the Anti-Tuberculosis Association.

COMPARISON WITH OTHER CITIES

The accompanying chart of Rockford's rating in the eleven major activities shows that it ranks well above the average for this group of cities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....	★
V. D. Control	H	.....	★
T. B. Control	H-P	.....		★
Pre-natal	P	.....	★
Infant	P	.....		★
Pre-school	P	.....		★
School	E	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....	★

¹See page 273.

It is the experience of most cities that, where there is an efficient Health Department, educational clinics, such as pre-natal and infant work, even when begun by private agencies, operate more effectively under the direction of the Health Department. A closer cooperation between the Health Department and the schools for the control of communicable disease is desirable.

SACRAMENTO, CALIFORNIA

Surveyed, April 14-19, 1924

Sacramento is located in a flat country bordered by the Sacramento and the American Rivers. It is about 100 miles from San Francisco. The village was founded in August, 1839 by Captain Sutter, a Swiss seafaring man who had received a grant of land here in return for favors done for the Mexican Government. In 1848 gold was discovered and the little settlement grew rapidly. In 1850, after the gold rush, the city was organized and an attempt was made to restore it to orderly growth.

Excellent levees have been built to protect the city from the two rivers on its borders and, although the city is below high water for these streams, there have been no floods in more than thirty years. The present city is planned with an eye to civic beauty. There are more than 1,000 acres of parks within the city limits and many beautiful residences have been built in the last few years.

The population of Sacramento in 1920 was 65,908, with about 17 per cent foreign born. The estimated population for 1923 was 69,950.

Sacramento has the second largest railroad shops west of the Mississippi, and the largest almond shelling plant in the world. In addition, there are many fruit and vegetable canneries, as well as a variety of other industries. The city is a large wholesale center with good shipping facilities.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The part-time health officer is appointed by the city manager for an indefinite term. The health officer, a general medical practitioner of high standing, was, at the time of the survey, able to devote about half of his time to the work of the Health Department. He had offered his resignation, to take effect July 1, 1924, so that a full-time man might be secured. The health officer is assisted by the following staff: One communicable disease nurse, one infant welfare nurse, nine food and milk inspectors, two plumbing inspectors, five sanitary inspectors, a bacteriologist and a laboratory assistant, two clerks, and a city physician, and, for the emergency hospital, a surgeon and three nurses. The health officer directs the emergency hospital and also the general municipal clinic. Additional personnel for the clinic are an anaesthetist, a nurse, and a social worker.

The budget of the Health Department for 1923 for salaries and wages

alone was \$62,773, though about \$7,000 of this sum should be deducted for work which is not strictly that of public health. The fact that \$31,740 or 57 per cent represents the salaries of inspectors alone indicates the predominant importance that is given to food and milk, sanitary and plumbing inspection.

Vital statistics are kept in the Health Department and the records were found to be well kept and properly classified.

The municipal clinic had been in operation only a few weeks at the time of the survey. At that time it was offering general medical and surgical care, including care of venereal disease. It was planned to add pre-natal and infant welfare work soon.

Apparently no effort is made for public education with regard to the control of communicable diseases, such as smallpox and diphtheria immunization. The one public health nurse visits cases of communicable disease and gives instruction. The greater share of the Health Department personnel however, is engaged in inspection services of various kinds. The food inspection work is exceedingly well organized and has had such an educational effect that it is probable that fewer inspectors could now carry on the work.

HEALTH OF THE SCHOOL CHILD

In Sacramento, the medical, nursing, and dental supervision of school children is under the Board of Education. The staff consists of one full-time physician, two nurses, one dentist, one nutrition specialist, and one secretary. Through a course of fifty lectures given each year, the teachers are taught to make routine inspection of the children for contagion. Children with symptoms of disease are then referred to the school physician, the city clinic, or one of the six local physicians who act as consultants. A routine physical examination is made only upon recommendation of teacher, nurse or parent. There were 906 such examinations made during the school year of 1922-23. Parents were present at 95 per cent of these examinations. Underweight children are under the care of the nutrition specialist, and receive special milk lunches each morning and afternoon.

Practically all of the school buildings in Sacramento have been rebuilt since the recent war and most of them are model buildings. Soap and paper towels are provided in each of the schools, and in all of the new buildings the desks are adjustable.

Under the guidance of the school medical staff, the physical education supervisor, and a supervisor of nature study, some health education work is being done by all teachers.

PRIVATE AGENCIES

The local chapter of the Red Cross employs three public health nurses, a supervisor, and two assistants. With this staff it conducts a mother's educational conference where infant and pre-school children may be brought

for weighing, measuring, and advice concerning feeding. A physician is in attendance during clinic hours. This conference is carrying on good educational health work. During 1923 there were under observation, 1,877 infants under one year of age. Over 5,000 home visits were made by the Red Cross nurses.

The Sacramento Tuberculosis Association is an active organization with a nurse director, a visiting nurse and an office secretary. It conducts three chest clinics weekly, at which a physician is in attendance, with follow-up home instruction. Particular attention is paid to children under 15 years of age. Of 834 individuals attending the clinic in 1923, 477 were under 15 years, and of 4,123 home visits, 2,484 were made to this younger group. A summer camp maintained by this association is open three months for under-nourished children.

Sacramento has many other private agencies, including the Y. M. C. A., the Y. W. C. A., children's homes and day nurseries, each doing something in the way of health education work.

COMPARISON WITH OTHER CITIES

Sacramento stands among the cities of the upper third in nine of the 11 major health activities, as shown by the accompanying chart. Its accomplishments in vital statistics, pre-school child hygiene and popular health instruction are especially marked. However, this does not mean that its standing in many of the activities may not be improved. In communicable disease control, especially, it secures slight credit.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H★		
V. D. Control	H-O	.....		★
T. B. Control	P	.....		★
Pre-natal	P	.....	★
Infant	H-P	.....		★
Pre-school	P	.....		★
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....		★

¹See page 273.

This relative ranking for communicable disease control would be improved by measures for immunization against smallpox and diphtheria, by a regular study of the incidence and distribution of communicable diseases by means of spot maps and charts in the Health Department, and by home instruction during isolation. An increase in the nursing staff within the Health Department is needed. A closer coordination of official and private agencies would result in better returns for the money expended.

SAGINAW, MICHIGAN

Surveyed, January 21-25, 1924

Saginaw is located in the east central portion of lower Michigan, about 85 miles northwest of Detroit and lies on both sides of the Saginaw River, 15 miles below Saginaw Bay on Lake Huron. The city covers about 17 square miles, and has developed from the merging of the two cities of East Saginaw and West Saginaw, and the recent addition of the municipality of Buena Vista. The city is a manufacturing center with a large diversity of industries, among which are automobile motors and trucks, steel tapes, iron foundries, coal mining, boilers, graphite, sugar, railroad shops, furniture, salt, motor trucks and plate glass. On account of its shipping facilities Saginaw is a commercial center for a rich agricultural territory. It is served by three main railway lines, and has electric interurban service, motor truck, and water transportation to Detroit and other industrial cities.

The population in 1920, according to the federal census, was 61,903, of which 19 per cent were foreign born. The estimated population in 1923 was 69,754.

HEALTH DEPARTMENT

The city is governed by a mayor and four commissioners, who are elected for four year terms, each directing one of the five city departments. The mayor is the Commissioner of the Department of Health and Safety, one division of which is the health department.

The health officer is appointed by the mayor, with the approval of the city commission, for an indefinite term. The position is a full-time one and has been held since May, 1922, by a physician with graduate training in public health, and a wide experience in health department administration. His staff consists of a corps of full-time workers, including a school physician, a director of dentistry, two dentist assistants, a supervising nurse, six visiting nurses, a dairy and food inspector, an assistant to him, two sanitary inspectors, and a clerk.

The department is well organized, and its program is extensive, embracing, directly and indirectly, almost every public health activity in the community.

Vital statistics are recorded by the city clerk, but birth and death records are loaned to the Health Department for analysis and tabulation.

Communicable disease control under the Health Department includes the

recording of cases, instruction and educational work through literature and home visiting by one of the nurses who devotes practically all of her time to this work, and daily inspection of school children by teachers for suspicious cases of illness with checking of suspicious cases by nurses. Vaccination against smallpox is required before children may attend school. Immunization against smallpox, diphtheria and typhoid are readily available, and during the school year beginning September, 1923, 2,462 children were vaccinated, and about 3,296 were immunized against diphtheria.

Venereal disease clinics are conducted by the Health Department, and during 1923, about 1,200 treatments were administered to 307 different patients, 27 of whom were children. The nurse is assisted in her follow-up by a worker in the Social Service Department.

Tuberculosis clinics are conducted by the Health Department, with the assistance of the Saginaw Tuberculosis Society, a private organization. The health officer is the examining physician, and the tuberculosis society furnishes two full-time nurses. During 1923 there were 208 patients who attended the clinic; there were 3,008 follow-up visits made by the nurses and 60 cases were hospitalized. There are no provisions such as open-air classes or preventoria for pre-tuberculous children.

The laboratory service, which includes the usual diagnostic examinations and water, milk, and food analyses, is furnished by contract by a local branch of a private laboratory.

The Health Department has charge of nuisance investigation, sewerage supervision, dairy and food inspection, and the control of the milk and water supplies. Only about 88 per cent of the dwellings have sewer connections.

Child welfare, extending through the care of the school child, and popular health instruction, complete the list of varied activities of the Health Department.

Maternity work has not been started, but is planned for the summer of 1924. The municipal infant welfare service consists of one clinic maintained throughout the year, and four additional summer stations in different sections of the city. The clinics are conducted by local physicians, assisted by the Health Department nurses, who also pay follow-up visits to the homes. During 1923 the attendance was not large, only 387 visits by children under two years having been made. The nurses made 285 home visits. There were no organized clinics or nursing service for pre-school children in 1923, but this service has been started in 1924, with the organization of pre-school circles by several Parent-Teachers Associations, and clinics held weekly in schools, to which infants and pre-school children are also admitted.

Dairy inspection is maintained by the Health Department and 27 per cent of the cattle are tuberculin tested. About 48 per cent of the milk supply is pasteurized.

The accomplishment of the department in disseminating health informa-

tion is conspicuously high and includes public lectures by the health officer (166 having been given in 1923), the publication of bulletins and pamphlets, and half a column of newspaper publicity is furnished by the health officer each week.

The budget of the Health Department in 1923 was \$49,651 or 71 cents per capita.

WATER SUPPLY

The water supply is publicly owned, and is derived from two sources. Water used for drinking is almost all pumped from 165 deep wells. Water for other than drinking purposes is taken from the Saginaw River which is polluted, and is used without treatment. Many attempts have been made in the last few years to introduce measures for improving the character of the supply, but progress has not been made, due to failure to secure the approval by referendum required to authorize such a change.

HEALTH OF THE SCHOOL CHILD

The physical examination of school children is carried out by the school physician, three dentists, and six nurses of the Health Department. The nurses make a general physical inspection of each child annually, and the physician examines only those children referred to him by the nurses. The physical record is left with the teacher and correction of defects found is obtained through printed notices sent to the parents, and follow-up by the teachers and nurses. Each child receives an annual dental inspection, and clinics are conducted for the treatment of children unable to pay. A survey made in 1923 showed that 64 per cent of all the children had dental defects, as compared with over 80 per cent in 1922.

All schools are provided with scales and children are weighed each month, with the assistance of the Parent-Teachers Associations. The educational value of the classroom weight record is utilized, and through the medium of the nursing visits underweight children are encouraged to improve their weight and general health. Health education work in the schools has been stimulated by the Health Department through monthly health lessons distributed to all grade teachers. A general interest in health education exists among the teachers, and efforts are made to correlate it with other subjects in the curriculum.

PRIVATE ORGANIZATIONS

In addition to the contributions to the public health resources made by the Saginaw Tuberculosis Society and the Parent-Teachers Association there is the Saginaw Welfare League which conducts an annual drive for the community budget for the various welfare and health organizations. The League has been in operation for five years.

A movement is now under way to correlate all health agencies in the city by the organization of a health center.

COMPARISON WITH OTHER CITIES

Saginaw ranks among the upper 29 cities surveyed in five of the eleven major health activities, among the middle cities in three activities, and among the lower cities in the three other activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H	.....		★
V. D. Control	H★		
T. B. Control	H-P	.....		★
Pre-natal	★		
Infant	H★		
Pre-school	★		
School	H	.....		★
Sanitation	H★		
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

The necessity for greater attention to two of the three activities in which Saginaw falls in the lower group, namely, pre-natal and pre-school care, has been recognized and steps have been taken to provide such service. The infant welfare service needs to be expanded. Public interest should be aroused in the necessity of further safeguarding the milk and water supplies.

SALEM, MASSACHUSETTS

Surveyed, April 21-26, 1924

The city of Salem, once known as Naumkeag, is located approximately 30 miles north of Boston. It is one of the oldest cities in the United States, having been settled only six years later than Plymouth. It was at one time perhaps the best known port in the New World. The city is filled with historic landmarks that speak of old cherished traditions, and there is an indescribable charm about many of the old colonial dwellings.

The population in 1920 was 42,529 and the population for 1923, estimated by the Census Bureau, is given at the same figure. This is due to the fact that the 1910 and 1920 censuses were practically the same. It is doubtless true, however, that some growth has taken place. Of the above population 26 per cent were foreign born whites and less than 1 per cent negroes.

The city is not a large industrial center. The manufacture of cotton cloth is the leading industry. Shoes, electric lamps, elevators, portable houses and machinery are made here.

DEPARTMENT OF HEALTH

The Board of Health consists of three members, only one of whom is appointed each year. Appointments to the Board of Health are made by the mayor and approved by the City Council. The Board of Health acts through a lay agent (comparable to health officer in most cities), who is a full-time employee. The present agent has been in office for nearly twenty years.

Other members of the Health Department staff include a sanitary inspector, a contagious disease nurse, a baby welfare nurse, and a clerk. The contagious disease hospital, also under the direction of the Department of Health, employs three graduate nurses, three under-graduate nurses, and four non-professional employees.

The usual Massachusetts arrangement prevails regarding vital statistics, the city clerk being responsible for the records of births and deaths, and the Health Department handling the reports of cases of communicable diseases. Both sets of records are well kept.

The communicable disease hospital furnishes excellent facilities for the care of existing cases of disease, but the city is not doing equally as much to prevent the spread of these diseases. Free immunization is available only against diphtheria. During 1923, 800 persons, mostly school children, were given toxin-antitoxin. The campaign did not extend to children of pre-school age. Vaccination is required before children may attend school.

Smallpox vaccine may be obtained at the Health Department, but there is no free vaccination clinic.

The infant welfare nurse visits every new baby in the home, offering to the mother instruction in infant hygiene.

It is estimated that about 60 per cent of the milk supply is pasteurized. Although dairy inspection was maintained up to 1920, it has since been abandoned. Some bacteriological and chemical analyses of the milk supply are made by the agent, but the work is undoubtedly insufficient in quantity to furnish thorough control of the milk being sold in Salem.

This milk work is the only laboratory work being done by the Health Department. Diagnostic work is sent to the state laboratory in Boston.

In addition to the above mentioned activities, the Health Department is responsible for the collection and disposal of garbage.

The appropriation for 1923, including the hospital and garbage collection, was \$60,684.61, or about \$1.42 per capita.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs one part-time physician and one full-time nurse. The physician gives each child in the public grade schools a rapid physical inspection once a year. No records could be obtained of the physical defects found or the corrections obtained. Although the amount of follow-up work is not large, it is believed that many tonsil and eye defects have been corrected.

The contagious disease nurse of the Health Department inspects the parochial school children for pediculosis, enlarged tonsils and adenoids, and dental defects. This nurse also does all the home visiting to trace contagious diseases among school children.

Only five of the public schools are equipped with scales. Children from other schools are taken to these schools once a year to be weighed and measured. Special milk lunches are available in the schools, but there are no open-air classes for underweight children.

Health education is receiving more attention in Salem schools than in many other cities in this group. Special periods of 20 minutes per week in the three lower grades and 30 minutes per week in the five upper grades are devoted to special health lessons, and in addition, an effort is made to correlate health teaching with all other subjects. Health posters and drawings were in evidence in many rooms. A health crusade in one school had an enrollment of about 80. A mothercraft class in another had 25 members.

PRIVATE AGENCIES

The Salem Tuberculosis Association conducts two clinics weekly. During 1923, 163 patients were seen at these clinics, and 1,088 home visits were made by the nurse. There is also a local tuberculosis hospital which has forty beds. In 1923, 31 patients from Salem were treated in this hospital. This associa-

tion also conducts a nutrition class once a week with 12 children in attendance and a posture class with 22 children.

The State Health Department finances two venereal disease clinics weekly at the Salem General Hospital. The total attendance at these clinics for 1923 was 3,141.

There is no organized pre-natal service in Salem. The Salem Hospital gave some advice in pre-natal hygiene to 23 expectant mothers in 1923.

Other organizations besides the Health Department interested in promoting infant welfare are The House of Seven Gables Settlement and the Lydia Pinkham Memorial. The former holds an infant welfare class one afternoon a week with a nurse in charge, and seven weighing stations throughout the city. The latter holds a clinic once a week with physicians in attendance for children up to five years of age. Nurses are also provided for follow-up work in the homes.

The Visiting Nurse Association employs two nurses for general bedside work. It is estimated that about half of the work done consists of visits to maternity cases.

PLAYGROUNDS

Salem has 12 playgrounds organized under a capable director. The total attendance at these playgrounds in 1923 was estimated at close to 145,000.

COMPARISON WITH OTHER CITIES

Salem ranks in the upper third of cities in five of the 11 major activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	P	.....	★
T. B. Control	P	.....		★
Pre-natal		.....	★
Infant	H-P	.....	★
Pre-school	H-P	.....		★
School	H-E★		
Sanitation	H	.....		★
Laboratory	H-O	.....	★
Pop. Health Inst.	H	.....	★

¹See page 273.

The medical examination of school children would be improved if more time were devoted to each child. The consensus of opinion is that this plan is superior even if it means restricting the examinations to fewer children.

As the young child is the greatest sufferer from diphtheria, it is the part of wisdom to stress immunization work among pre-school children. Both of these steps would be advantageous for Salem.

The private agencies in Salem are well organized for infant welfare work although it would seem that the services of a physician should be added to the clinic.

SAN JOSÉ, CALIFORNIA

Surveyed, March 31—April 5, 1924

San José is located about 50 miles south of San Francisco in the Santa Clara Valley, which runs back from San Francisco Bay. It is the central and largest city of this valley. It was the site of one of the earliest settlements of Spanish friars and was originally known as "Pueblo de San José de Guadalupe." The 1920 population was 39,642, with about 20 per cent foreign born. The estimated population for 1923 was 41,957.

The Santa Clara Valley is famous for its fruit and other farm products. It is said to produce half the dried prunes in the world. One of the principal industries of San José is the canning and shipping of these farm products. Other industries include the manufacture of various metal products, engines, farming implements, and fine charcoal.

There are very few apartment houses in San José, the one-family house, of bungalow or larger style, predominating.

There are two Catholic colleges, one within the city limits and one a few miles outside, and a Teachers' College, with an enrollment of about one thousand.

DEPARTMENT OF HEALTH

The Board of Health, which is only advisory, must by law consist of three physicians, one civil engineer, and one lay citizen. The health officer is appointed by the city manager for an indefinite term.

The present health officer is a physician who has been connected with the Board of Health for some fifteen years and who has twice before acted as health officer. He devotes about half time to Health Department duties. His staff includes a secretary, a communicable disease nurse, a laboratory technician and a clerk, five food and milk inspectors and two sanitary inspectors. The Health Department budget for 1923 was \$22,270.88, or 53 cents per capita. The duties of the Health Department include the keeping of vital statistics, control of communicable disease, inspection of meat, milk and other foods, plumbing and sanitation, and the maintenance of a public health laboratory. All of these branches of the work seem to be receiving reasonably good attention. More than three-fourths of the milk supply is now being pasteurized and the department is looking forward to making pasteurization compulsory.

There seems to be a good understanding of the value of preventive

measures in regard to communicable disease and of the opportunities for public health education in connection with its control. During 1922 and 1923 an active campaign was carried on for immunization against diphtheria. As a result, 1,200 children were immunized during sixteen months.

HEALTH OF THE SCHOOL CHILD

The Board of Education employs a part-time physician and three full-time nurses for supervision of the health of school children. The physician, assisted by the nurses examines the children once every two years. He examines them at the rate of about ten an hour. The nurses do home follow-up work to secure correction of defects. There are no special classes for defective or for pre-tuberculous children. Some health teaching is carried on in all the schools, but the amount and quality of the teaching depends greatly on the individual teachers.

GOOD CHEER CLUB

The most important volunteer association in San José is the Good Cheer Club, which has been in existence since 1904. At present it conducts a health center in a centrally located building adjacent to the offices of the county tuberculosis society and the local Red Cross. Here the following clinics and advisory services are held: General medicine, special diagnosis, gynecology, neuro-psychiatry, children's diseases, venereal diseases, eye, ear, nose and throat, skin disease, dentistry, pre-natal and infant welfare. During 1923, there were 3,604 patients attending these clinics, the total visits amounting to 11,766. Of these visits, 2,916 represented babies under two years of age. It is interesting to note that, whereas organized effort for the pre-school child is only being begun in a great many of the 86 cities, in San José there were 1,708 clinic visits by children from two to six.

OTHER PRIVATE AGENCIES

The Santa Clara County Tuberculosis Association holds two chest clinics and one X-ray clinic weekly. One full-time nurse is employed for these clinics and for home work. The association also pays half of the salary of a nurse who teaches hygiene in the Teachers' College and makes physical inspections of the students there. The association maintains a preventorium outside of the city, which, during 1923, housed fifteen girls from four to sixteen years of age. Boys needing care were sent to the Palo Alto preventorium.

San José has two good day nurseries with a combined capacity of about 200. Attention is paid to physical examinations, proper exercise, rest, and proper feeding.

There is also an institutional home with a capacity for 90 boys and girls between three and sixteen. The institution employs a farmer and has an

abundance of fresh vegetables and milk. It was said that each child had more than a quart of milk a day.

COMPARISON WITH OTHER CITIES

In its public health activity San José stands among the upper third of cities in eight of the eleven major health activities and among the middle third in three.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	P	.....	★
T. B. Control	P	.....		★
Pre-natal	P	.....		★
Infant	P	.....		★
Pre-school	P	.....		★
School	E	.....	★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....	★

¹See page 273.

There is an obvious lack of balance in the work of a health department which maintains seven food and sanitary inspectors and only one nurse and no clinic service. The city, however, attains a high standing because of the character of the work of the private agencies. This arrangement tends to limit the educational work which the Department of Health might carry on through the clinics. A closer relationship between the health center activities and those of the official agencies would no doubt work to their mutual advantage.

SHREVEPORT, LOUISIANA

Surveyed, February 11-17, 1924

Shreveport is located in the northwestern part of Louisiana on the banks of Red River. The city is largely surrounded by bayous and gently rolling hills.

The older part of the city contains many substantially constructed brick houses, but the wooden, two-family house is the prevailing type throughout the city. Some of the negro portions of the city are badly crowded and unsanitary. The newer parts of the city are beautifully laid out. There are 10 parks, one of which contains the buildings of the Louisiana State Fair. An excellent public library has recently been built and will be supported by the city.

The population in 1920 was 43,874. Negroes composed about 40 per cent and foreign born about 3 per cent of the population. The estimated population in 1923 was 54,590.

Shreveport is the largest manufacturing and distributing point within a radius of about 200 miles. It occupies an enviable position as a lumber market. Other important products include glass, gas and oil, chemicals and heavy hardware. Shreveport is also the largest inland cotton market in the United States.

DEPARTMENT OF HEALTH

The Board of Health, appointed by the city commission, consists of three physicians, one commissioner and one layman. The present health officer is a physician, with experience in the army and as a county health officer. He devotes a little time to the practice of surgery and all the remainder of his time to the Health Department. The Health Department staff includes a physician, a bacteriologist, eight inspectors, a clerk, and eight other inspectors and laborers who are specially engaged in mosquito control work. The health appropriation for 1923 was \$28,498.57, or about 52 cents per capita. Besides the usual health department work, the Shreveport department is charged with garbage collection and disposal, and has been carrying on an active mosquito campaign.

Due to some misunderstanding, the State Health Department and the City Health Department each maintain a registrar of vital statistics. Two sets of records are kept, and it is even necessary, for undertakers to take out burial permits from both officers. Reporting of communicable disease

seems to be good with the exception of tuberculosis. For this disease, during the last ten years, the number of cases reported has never been more than half of the number of deaths reported. Reporting of births, apparently, is not complete.

Quarantine of communicable disease cases is carried out by a sanitary inspector who also gives the necessary instructions regarding it. There are no spot maps or statistical studies in the Health Department office bearing on the prevalence of communicable disease. It is not a requirement that children be vaccinated before they may attend school. However, 8,263 persons were vaccinated in 1923. There has been some newspaper publicity regarding the value of immunization against diphtheria but, so far as could be determined, no administration of toxin-antitoxin except perhaps to a few cases in private practice.

Misunderstanding with the State Board of Health is again apparent regarding control of the milk supply. It is reported that the state does not consider that the city inspector has jurisdiction outside the city limits. All cattle are said to be tuberculin tested, but only about 15 per cent of the milk supply is pasteurized and the need for an adequate system of farm inspection is apparent. Less than 400 bacteriological examinations of milk were made in 1923. Over 8,000 inspections of food handling establishments and 3,024 sanitary inspections were made.

There is no tuberculosis service of any kind in Shreveport. A sanitorium outside the city cared for 150 Shreveport patients in 1923. There is no doubt about the desirability of inaugurating a tuberculosis clinic and nursing service in Shreveport. The city has nearly 40 per cent negro population, a race known to be peculiarly susceptible to tuberculosis. The great discrepancy between the number of cases and the number of deaths reported shows how little is known of the prevalence of this disease.

Some venereal disease work is done by the charity hospital and by a clinic begun by the United States Public Health Service during the war. The surveyor was unable to obtain records of the amount of work done.

There is no organized pre-natal work. The majority of the colored births are attended by midwives of whom there are about 40 in Shreveport. The still-birth rate is high. In 1923, there were 110 still-births to 1,143 live births.

The only infant welfare work done is carried on by the Red Cross nurses in the course of their routine bedside nursing.

HEALTH OF THE SCHOOL CHILD

The Board of Education has jurisdiction over the entire parish. Shreveport has a borough superintendent but his authority extends to a few of the larger suburban schools so that it was almost impossible to obtain exact figures on the number of physical examinations or corrections of defects for Shreveport alone. The school medical inspection is carried on by a physician

and nurse employed by the Red Cross. All the children in the white schools are given a rapid inspection annually. This inspection does not include hearing or vision tests, or examination of heart and lungs. Children are weighed and measured twice a year but no records sent to their parents. Milk is available in some of the schools for those desiring it.

Playground space is adequate for the schools but there is not a great deal of apparatus. Sanitation of some of the colored schools should be improved.

Parent-Teachers Associations are doing a good deal in the way of co-operating with principals and they have an undoubted interest in health teaching.

PUBLIC HEALTH NURSING

The Red Cross maintains three public health nurses. One acts as supervisor and does some educational work in public health as well as conducting home nursing classes. One gives her time to school work as heretofore mentioned. The third does routine bedside nursing.

COMPARISON WITH OTHER CITIES

The most commendable piece of health work to be found in Shreveport seems to be the rather thorough campaign to eradicate mosquitoes.

It is evident by the accompanying chart, however, that Shreveport still has a long journey to go before a comprehensive health program is achieved. At present too many activities are entirely untouched by either official or private agencies.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H-O ¹★		
Com. Dis. Control	H★		
V. D. Control	O★		
T. B. Control	★		
Pre-natal	★		
Infant	★		
Pre-school	★		
School	E-P★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H★		

¹See page 273.

In comparison with other cities Shreveport is among the lower third in seven of the 11 major health activities, and in the middle third in three.

SPRINGFIELD, ILLINOIS

Surveyed, May 19-24, 1924

Springfield is situated in the center of Illinois, in the corn belt and coal fields district. The surrounding country is nearly level with only slight irregularities. The city is traversed by the Sangamon River, which provides means of water supply and sewage disposal. Bonds have recently been voted for a water filtration plant. At present the water is taken from infiltration galleries underneath the river and is chlorinated.

The population in 1920 was 50,183, with about 5 per cent negroes and 11 per cent foreign born. The estimated population in 1923 was 61,833. The residence district is composed almost entirely of one-family houses, about 60 per cent of which are owned by their occupants.

Coal mining and agriculture are the principal industries affecting Springfield. A varied list of smaller activities includes milling products, brick and tile, chemical colors, road machinery, automobile parts, clothing, farm implements, meters and furniture.

DEPARTMENT OF HEALTH

A political upheaval just prior to the survey had resulted in the election of an interested commissioner of public health and safety, who was anxious to obtain a satisfactory health administration for the city. The new full-time health officer, appointed by him, a physician with experience in public health, had only been in office two weeks. At this time the Health Department was composed of a full-time physician and one nurse in the contagious disease hospital, a full-time clerk and a half-time stenographer, four sanitary and food inspectors, and five nurses doing child hygiene work. The city laboratory work is sent to the state laboratory located in Springfield.

The appropriation for the Health Department in 1923 was \$25,731, or about 42 cents per capita.

Records for communicable diseases were fairly complete for three years previous to the survey. The director of the child hygiene nurses has been extraordinarily active in urging birth registration. There are no spot maps or other studies of the incidence of communicable disease found in the Health Department office. Some attempt has been made to encourage immunization against smallpox and diphtheria, but no record could be obtained of the number of persons immunized.

A system of supervision of the milk supply has not yet been developed.

Springfield is one of three cities in the 86 studied in which there is no official organized farm inspection and no regular laboratory analysis of milk. A few samples are sent to the state laboratory and one milk company is doing some farm inspection on its own initiative. Very little tuberculin testing is done but it is estimated that about 85 per cent of the milk supply is pasteurized. A few inspections of food handling establishments are made by the sanitary inspectors.

The venereal disease clinic, maintained by the state, gave 4,690 treatments in 1923.

The Bureau of Child Hygiene is doing an unusual piece of work. A competent supervisor directs the work of four nurses. Infant and pre-school clinics are conducted in seven different centers by seven part-time physicians, who give detailed physical examinations. There is an average attendance of 18 children at each clinic. There were 2,000 children seen at these clinics during 1923, and 12,514 home visits were made. The Health Department does no pre-natal work. A few expectant mothers are seen at the outpatient department of one of the hospitals. About 50 per cent of the births in Springfield are in hospitals.

HEALTH OF THE SCHOOL CHILD

The Department of Education employs five nurses. These nurses inspect all pupils annually, devoting from eight to twenty minutes to each pupil, depending on the amount of time spent in talking to each pupil. Children are weighed once a year and all 10 per cent or more underweight are reweighed three or four times during the year. Some home visiting is done by the nurses to obtain correction of defects, but complete records of the results could not be obtained. At the school dental clinic in 1923, 2,558 children were found to have dental defects, and 702 of these had corrective work done.

There are no out-door classes for pre-tuberculous children and milk is offered in only two schools. During the year previous to the survey a definite plan was worked out by the supervisor of elementary schools for incorporating health education in the school curriculum, but with her departure at the end of the year the work was dropped. Most of the educational work now being carried on is done by the school nurses. They teach some infant care to the domestic science girls in the eighth grade.

A physical education program is carried out in spite of the fact that very little playground apparatus is provided.

PRIVATE AGENCIES

The Springfield Tuberculosis Association has three nurses and one clerk. The chief work is a tuberculosis clinic where 672 cases were cared for in 1923, and the home nursing connected with that clinic. They also do bedside nurs-

ing in the city and handle the post-partum care of maternity cases. There are good provisions for the hospitalization of tuberculosis cases.

St. John's Hospital has an unusual number of free clinics for the indigent. The county pays the hospital a small fee for each patient. During 1923 there were 1,992 patients treated and under observation, with a total of 12,232 clinic visits.

COMPARISON WITH OTHER CITIES

The chart for Springfield presents a varied picture.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H★		
V. D. Control	O	.....		★
T. B. Control	P	.....		★
Pre-natal	P	.....	★
Infant	H	.....		★
Pre-school	H★		
School	E★		
Sanitation	H★		
Laboratory	O	.....		★
Pop. Health Inst.	H-O	.....	★

¹See page 273.

Provisions for the care of tuberculosis patients are excellent. There is a surprising lack of interest in the production of a safe milk supply. The school nurses are thorough and interested in their work, but the value of the work they do would be increased greatly by adequate medical supervision.

SPRINGFIELD, MISSOURI

Surveyed, May 11-16, 1924

Springfield is situated in the Ozark Mountains in southwestern Missouri. It is a railway center of considerable importance and is also the largest center of population in that section of the state.

The population in 1920 was 39,631, with about 5 per cent negroes and 3 per cent foreign born. The estimated population in 1923 was 41,228.

The Southwestern State Teachers College and Drury College are located in Springfield. The residence district is made up almost entirely of one- and two-family houses.

Much of the industry in Springfield centers around the railroad shops. Other manufacturing plants are producing art glass, awnings and tents, brooms, candies and carbonated drinks, cider and vinegar, cigars, clothing, creamery products, furniture, harness, sheet metal, trunks, farm vehicles, and so forth.

DEPARTMENT OF HEALTH

The administrative head of the Health Department is a member of the city commission, elected by popular vote every four years and known as the commissioner of health and sanitation. He is assisted by a laboratory worker, two dairy inspectors, a plumbing inspector, a food inspector and a clerk. The expenditure for health for 1923 was \$17,327, or about 42 cents per capita.

About 25 per cent of the milk supply is pasteurized. Laboratory records show an improvement in the bacteria counts of the milk supply over the preceding year. Self-recording thermometers are not universally used in pasteurizing plants. Almost all of the dairy cattle supplying Springfield are said to be tuberculin tested. There were 3,027 inspections of food handling establishments and 1,517 sanitary inspections made during 1923.

As there is no physician or nurse connected with the Health Department the control of communicable disease is in the hands of the bacteriologist. The usual routine of quarantine and placarding is followed. No spot maps of disease were in evidence in the Health Department offices and records extending back more than a year or two were difficult to obtain. No reports of tuberculosis cases could be found. Vaccination is not required for attendance at school. However, free immunization against smallpox, diphtheria,

and typhoid fever is available, although no records of the number of immunizations given could be obtained.

HEALTH OF THE SCHOOL CHILD

The one nurse employed by the Board of Education gives an annual inspection to all the grade school children. Pupils are weighed monthly and measured twice a year. Fairly complete records of physical defects noted by the nurse were obtained. The numbers of corrections obtained are not large, due probably to the fact that the nurse has very little time for follow-up work. Milk is available in the schools but there are no open-air classes for pre-tuberculous children. Most of the health education work being done is really a part of the physical education program, although there is an organized Health Crusade in some of the schools and many teachers are attempting to correlate health with their other teaching.

GREENE COUNTY HEALTH ASSOCIATION

Begun by a group of private citizens, and later taken over by the county with some support from the state, the Greene County Health Association now has a staff of one full-time physician, two full-time nurses, a part-time physician and a part-time nurse doing venereal disease work, and a full-time clerk. This Association furnishes the only public health nursing service in the city. The headquarters of the Association are in Springfield. Clinics are held for tuberculosis cases, expectant mothers, infants, pre-school children and school children the clinics being open nearly every morning. Treatment is given in the case of indigents. During the year 1923, 5,778 treatments were given in the venereal clinic and 153 home calls were made to pre-natal cases. Relatively few births take place in hospitals, the proportion of the total in 1923 being about 18 per cent.

PRIVATE AGENCIES

At the time of the survey the Kiwanis Club was just undertaking the provision of 13 recreation centers with supervisors throughout the city. One other organization has agreed to provide eye-glasses for necessitous children with defective vision.

Two child caring institutions provided for about 140 children in 1923. The surroundings and food in these institutions are above the average.

The Parent-Teachers Association furnishes milk for undernourished children and clothing for necessitous school children.

COMPARISON WITH OTHER CITIES

The accompanying chart shows that for a majority of the eleven major activities Springfield is grouped with the lower third of cities.

Springfield is one of the few cities in the group studied in which the health officer is elected by popular vote and of whom professional qualifications are not required. The absence of physicians and nurses necessarily limits the field of work of the Health Department.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	O	.....		.....★
T. B. Control	O-P★		
Pre-natal	O★		
Infant	O	.....	.....★
Pre-school	O★		
School	E★		
Sanitation	H	.....	.....★
Laboratory	H	.....	.....★
Pop. Health Inst.	O	.....	.....★

¹See page 273.

The Greene County Association clinics could be greatly improved and a better attendance secured if separate clinics for babies, pre-school age groups, and expectant mothers were established at fixed hours with specialists in attendance.

SPRINGFIELD, OHIO

Surveyed, February 4-9, 1924

Springfield is a manufacturing community, surrounded by agricultural country, situated in the southwestern part of Ohio. Dayton, the nearest large city, is 25 miles distant. The population at the 1920 census was 60,840 with 84 per cent native white, 12 per cent negroes, and 4 per cent foreign born whites. The estimated population in 1923 was 65,857.

The city has numerous and varied factories, producing such articles as electric fans, automobiles, small motors, and farming implements.

The residence district presents a well kept, attractive appearance, the one- and two-family type of house predominating. There is one large park of more than 200 acres.

DEPARTMENT OF HEALTH

When necessary for the approval of ordinances, the city commission acts as a board of health. The health officer is appointed by the city manager for an indefinite term. The present health officer is a physician, who, for several years previous to his appointment in Springfield, was assistant health commissioner of a large Ohio city. Included in the Health Department personnel are an assistant director, three part-time school physicians, six nurses, a clerk, a bacteriologist, two sanitary inspectors, and one food inspector.

The budget for 1923 was \$21,719, or about 33 cents per capita.

The Health Department is responsible for the keeping of vital statistics, control of communicable disease, inspection of milk and other foods, sanitation and plumbing, laboratory service, and child welfare work, including school medical inspection.

The Health Department records and the annual reports show that vital statistics are well kept and although not all the usual classifications by age, sex, color, and nativity, are made, it is clear that records are put to good use.

With but one inspector for all the work, it would seem that the food and milk control could not be entirely adequate. The quality of the milk supply has appreciably improved following the introduction of a good milk ordinance in 1922. At the time of the survey the health officer was agitating an equally effective meat inspection ordinance.

Clinics are maintained for tuberculosis, and for venereal disease. There are also pre-natal, infant and pre-school clinics. Records for these clinics

are more complete than for those in many of the cities visited. They are well organized but none of them has a large attendance. All would doubtless profit by more active promotion. A bond issue has been arranged to finance a municipal tuberculosis sanitarium.

The six Health Department nurses spend their mornings in the schools and do generalized district nursing in the afternoons. In 1923 they made a total of 7,499 home visits. Of this number 2,948 were in connection with school work, 1,613 for communicable disease, and 1,458 for infant and pre-school work.

HEALTH OF THE SCHOOL CHILD

In addition to half the time of the six nurses above mentioned, the staff for school medical inspection includes three part-time physicians, a dentist, and an eye, ear, nose and throat specialist; the last two are employed by the Board of Education. In their annual report the aims of this staff are given as threefold; to teach personal hygiene and health habits, to control communicable disease, and to accomplish the correction of physical defects. The children who are 10 per cent or more underweight receive the first attention from the examining physicians. After them, children of the first, second, and third grades are examined. During 1923, 2,729 children were examined, of whom 19 per cent were found without physical defects. Correction of defects, as recorded for the remainder, is fairly high. There are two classes for retarded children and one for crippled children. A strong plea had been made for open-air classes and classes for children with defective vision and hearing, but up to the time of the survey such classes had not yet been developed. Very little health education is being developed in the public schools, aside from such health habit instruction as the physician and nurse give in the course of their duties. The newly appointed superintendent of schools expressed keen interest in the subject, however, and the possibilities for progress in this field are good.

PRIVATE AGENCIES

The health work of private agencies does not stand out in any particular regard, owing at least partly to the fact that the Health Department is developing a rather comprehensive program. Some of the Parent-Teachers Associations have arranged for the sale of milk in the schools, one men's club provides a shoe fund for school children, another has become interested in crippled children, and the Y. W. C. A. offers special work in corrective exercises.

COMPARISON WITH OTHER CITIES

Springfield, as is evident by the accompanying chart, rather consistently treads the middle path in public health work.

HEALTH SURVEY OF 86 CITIES

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	H★		
T. B. Control	H★		
Pre-natal	H★		
Infant	H★		
Pre-school	H★		
School	H★		
Sanitation	H★		
Laboratory	H★		
Pop. Health Inst.	H-P★		

¹See page 273.

That most of the activities in which the Health Department is interested deserve a middle-group classification instead of an upper one is largely due to lack of personnel. A larger budget with provision for an increase in personnel would make possible the carrying out of the excellent program already outlined, particularly in milk and food inspection. It seems, also, that more help could be expected from volunteer agencies, if sufficient responsibility were given them.

STOCKTON, CALIFORNIA

Surveyed, March 24-29, 1924

Stockton is situated 80 miles east of San Francisco, along the San Joaquin River, just at the limits of tide water. West of the city is a great delta region of 250,000 acres, in many places protected from inundation by levees. Tide water breaks this region up into a series of islands. Adjacent to this city are vineyards, grain land and a large dairying country.

The city of Stockton is in a flat country. Part of the city is built on filled land and a section is protected by a levee. It was settled in 1847, and in 1849 it was the place where the gold prospectors outfitted before starting south. In 1920 the population was 40,296, of whom 17 per cent were foreign born whites and 5 per cent were Japanese, Chinese and Indians. The estimated population in 1923 was 44,897.

The prevailing type of house is the one-family bungalow, and a large percentage of people own their homes. About 170 acres of parks furnish recreation space for the city.

Stockton is a center for the production of agricultural machinery. Flour and cereal products are made here in large quantities, and there are many fruit and vegetable canneries.

DEPARTMENT OF HEALTH

Stockton, together with the rest of San Joaquin County, forms the San Joaquin Local Health District. Accordingly, the official health work of Stockton can only be discussed as a part of the work of the health unit. An epidemic of diphtheria in 1920 and 1921 caused Stockton and several smaller neighboring towns to become interested in some cooperative means of disease control. Taking advantage of a state Act authorizing county supervisors to create a local health district upon receipt of a petition signed by 10 per cent of the voters in a proposed district, the citizens of San Joaquin County organized the San Joaquin Local Health Unit in March 1923. Just as the unit was started, certain persons started suit to contest the constitutionality of the enabling Act, and work was retarded for several months while the suit was carried to the Supreme Court of the state, where the Act was finally upheld.

During the period when the Enabling Act was being tested, the funds of the Health Department were tied up so that they could not be used. The

principal supporters of the project began to make private loans to the service. As time went on a campaign of education was carried on throughout the district to acquaint the people with the aims and purposes of the service. Though this was done at that particular time to secure loans in order that the service might carry on during this period, it served as a campaign of education in the county in public health matters such as probably has not occurred in any other city studied.

That the campaign was successful is attested by the fact that the loans received enabled the service to continue with only slight impairment for a period of approximately six months.

The full time director of the unit is a physician with many years experience in public health work. There are two assistants to the health officer, acting as chiefs of the divisions of sanitary instruction and public health nursing. The remainder of the staff consists of four sanitary inspectors, ten public health nurses, three clerks, one laboratory technician, one dentist, one truck driver, three deputy registrars, and one physician for care of the indigent sick. The federal estimate of population for the county was 90,423 in 1923. This makes the district served by the staff just enumerated slightly larger in population and considerably larger in area than any city in this entire survey.

Since the unit was only formed during 1923, the budget was not well settled, at the time of the survey, but it was expected that the cost would be about 95 cents per capita.

Practically the entire health program of the county is being administered by the health unit, although several private agencies continue to contribute both time and money to the work. It is evident that the control of communicable diseases is something more than the routine quarantine usually depended upon, since in 1923 there were in the health district 4,000 diphtheria immunizations and 3,000 smallpox vaccinations given. Free immunization is available for smallpox, diphtheria and typhoid. Apparently the organization of the health unit is producing an effect upon the reporting of communicable diseases, since 1923 was the first year in five in which the number of tuberculosis cases reported exceeded the deaths.

The county hospital, five miles outside of Stockton, provides 42 beds for the care of tuberculosis and 36 beds for other communicable diseases.

Headquarters of the unit, with complete health center and clinic quarters, are maintained in Stockton and there are local health centers in four smaller towns in the county. In addition to the clinics, there is a dental and school hygiene truck doing educational and demonstrative work in the schools.

Among the agencies cooperating in the unit are the Child Hygiene Division of the State Board of Health, which furnishes the service of a maternity and infant hygiene nurse, and the Red Cross, which pays the salary of one nurse and furnishes funds for free milk for undernourished children.

Clinics are maintained at the health centers for tuberculosis, venereal

diseases, pre-natal, infant, and pre-school child welfare, and mental diseases. Since these clinics were in operation for only about half of 1923, and since most of that time was the period of strife in which the future existence of the health unit was being determined, it is natural that the records of attendance should not be large. However, the plan of organization is good and there is every reason to believe that their field of usefulness will increase rapidly.

At the time of the survey there was no school physician. Physical inspection of school children was made by nurses who, of course, did not attempt to examine heart and lungs. Any children needing further examination were referred to one of the health centers. Children are weighed monthly and milk is available during the morning school session for those who wish it.

There is no organized course in health education but there is a definite effort to include the health aspects in all subjects taught. The schools are practically without playground apparatus.

PRIVATE AGENCIES

The health activities of the Red Cross have been mentioned above. The Associated Charities, with an administrator and a trained family case worker, do the major portion of the social work for Stockton.

There is one day nursery, with a capacity for 45 children, which appeared to be well managed. A nurse from the district health center visits every morning and a physician is called when needed.

The Children's Home maintains an excellent institution for 52 children, with two matrons in charge, also a cook and a janitor. The home is properly financed, and each child receives more than a quart of milk a day.

COMPARISON WITH OTHER CITIES

The accompanying chart shows the relative ranking of Stockton, as compared with other cities surveyed, with regard to the eleven major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....		★
T. B. Control	H★		
Pre-natal	H	.....		★
Infant	H★		
Pre-school	H	.....		★
School	H	.....		★
Sanitation	H	.....	★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

Since so much of the work in Stockton was in process of organization at the time of the survey, it was somewhat difficult to evaluate it. Two favorable signs, were evident even in this early stage: first, the plan to coördinate all public health activities under one head so that there would be no overlapping of effort; second, the clear understanding of the broad educational value of a good public health program. As to the needs for future development, consideration might well be given to the addition of a pediatrician for the children's work, a school physician, and an extension of the tuberculosis program.

TAMPA, FLORIDA

Surveyed, April 21-28, 1924

Tampa is situated in the central part of the west coast of Florida on Tampa Bay. The surrounding country is flat with numerous indentations and rivers, making an irregular shore line.

In 1920 the population was 51,608, but in 1923, 22 square miles of contiguous territory were added to the corporate limits and local estimates placed the population at about 90,000. Native whites constitute only about 57 per cent; foreign born make up 21 per cent; and negroes 22 per cent.

The city has two "Latin quarters" which are largely inhabited by Spaniards, Italians and Cubans, who are employed in the large cigar industries of the city. One-family residents predominate throughout the city and there are many fine buildings in the business district.

Tampa and the surrounding region is an important tourist center. There are many fine hotels, country clubs, tourist camps and accommodations for fishermen, and a large municipal park.

The city is teeming with life and industry and is growing rapidly. It has freight service to foreign ports and good railroad facilities. The principal industry is the manufacture of cigars. Other large industries include fishing and the manufacture of boxes and asphalt paving blocks. Exports include phosphate, lumber and citrus fruit.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The full-time health officer is appointed by the city commissioners for an indefinite term. The present health officer is a physician. He is assisted by a full-time physician (who divides his time between communicable disease control and a venereal disease clinic), a full-time clerk (who acts as vital statistician and secretary), a laboratory technician and an assistant, and a colored nurse, who divides her time between the venereal disease clinic and home visiting. The personnel of the Health Department includes also one dairy inspector, a meat inspector, a food inspector, a sanitary inspector, and an inspector of weights and measures, each of whom carries on his activities more or less independently. The sanitary inspector gives about half his time to anti-malaria work. The budget for the work carried on by this staff was \$31,000 for 1923, or about 34 cents per capita.

Only about 20 per cent of the milk supply is pasteurized. The average number of milk samples analyzed monthly appears to be about 60, although figures for the year could not be obtained.

Some work was done during 1923 to immunize children against diphtheria, with the result that 500 children received toxin-antitoxin. There is a requirement that children be vaccinated before they attend school.

The vital statistics for this city are kept by one clerk who is also secretary to the health officer. The reports of communicable disease seem to be very meager; the ratio of cases to deaths would seem to indicate that not all cases are reported. For example, in 1922 there were 65 cases of tuberculosis reported and 63 deaths; and in 1923, 88 cases and 79 deaths. Taking into consideration the probable poor reporting, the deaths from diarrhea and enteritis under two years seem high. For the years 1921, 1922 and 1923 they were reported as 34, 21 and 27, respectively.

HEALTH OF THE SCHOOL CHILD

There is no school medical inspection service of any kind and there are no separate classes for children needing special care. Neither are children weighed or measured in the schools. There is a prescribed course in hygiene, but other than this there is no organized health education program. There are fairly active Parent-Teachers Associations which could do good work under proper stimulation. The school buildings are well constructed and are in good sanitary condition. Only one school has playground equipment.

PRIVATE AGENCIES

Until 1923 there were sixteen social agencies, each working alone and making separate annual drives for funds. In 1923 these agencies formed a Welfare Council. Their total budget was \$179,000. One of the active members of this Welfare Council is the Red Cross, which in addition to its work for veterans, has large classes in first aid, home hygiene and care of the sick. It also sponsors a dental clinic, largely for school children, which is maintained in the city hall; both city and country contribute to its support.

The Milk Fund, a department of the Tampa League of Women's Clubs, expends \$150 a month for Tampa's undernourished children.

The Board of Trade has a health section which is especially interested in malaria work.

Tampa has a local Tuberculosis Association which does not belong to the Council and which obtains its funds by the sale of seals. Several years ago the association built a preventorium which it later sold to the county, and funds are now being accumulated for another one. No clinic work is being done and there is no home nursing for tuberculosis.

There is no private nursing association in Tampa.

PUBLIC UTILITIES

The present water supply is not adequate for the city's needs and a bond issue for a new supply is being contemplated. No definite plan for the new supply has yet been decided upon.

The city is only about 60 per cent sewerred. Sewage is treated in an Imhoff tank before it is emptied into the bay.

COMPARISON WITH OTHER CITIES

A glance at the accompanying chart, giving the relative standing of Tampa in the eleven major activities, shows at once that it is not doing work in a number of the activities usually considered essential to the public health program of a city.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....	★
Com. Dis. Control	H	.....	★
V. D. Control	H	.....	★
T. B. Control	P	.....	★
Pre-natal		.....	★
Infant		.....	★
Pre-school		.....	★
School		.....	★
Sanitation	H	.....	★
Laboratory	H	.....	★
Pop. Health Inst.	H-O-P	.....		★

¹See page 273.

With the exception of some service at the venereal disease clinic, Tampa has practically no public health nursing service. It has no school medical inspection, no clinics, except a dental clinic, no pre-natal or infant welfare work, very little playground equipment, and very little health education or organized physical education in the schools.

The Welfare Council seems to be enlarging its work intelligently, but there is great need for the official health agencies to inaugurate a comprehensive health program. There is no reason why Tampa should not rapidly develop such a program. It has the potential leadership and the resources, and the need is unquestioned.

TERRE HAUTE, INDIANA

Surveyed, March 10-15, 1924

Terre Haute is situated on the Wabash River in the middle western part of Indiana. The city and all surrounding country is practically level. The county has extensive coal beds and is also rich in clay and shale deposits of a superior quality.

The population in 1920 was 66,083, of which about six per cent were foreign born whites and six per cent were negroes. The estimated population for 1923 was 69,439. Individual homes predominate, 65 per cent of them being owned by their occupants.

The principal industry is coal mining. Other industries include glass, car works, mine machinery, brick, drain tile, enamel ware, and canneries.

The coal industry has frequent labor disturbances, with their attendant poverty.

DEPARTMENT OF HEALTH

The Board of Health, appointed by the mayor, is composed of three physicians. The part-time health officer is a physician devoting a good deal of time to private practice but nevertheless much interested in Health Department affairs. He is assisted by a clerk, who directs the office, a sanitary inspector, a milk and food inspector, and a part-time physician. The appropriation for the health department in 1923 was \$12,200 or about 18 cents per capita.

The work of the Health Department includes food and milk inspection, handling of nuisance complaints, control of communicable disease, recording of vital statistics, and management of a venereal disease clinic.

About 87 per cent of the milk supply is pasteurized. Samples are sent to the state laboratory for bacteria counts and the results published monthly. Records of only 50 visits to dairy farms in 1923 could be obtained. There were 2181 inspections of food handling places and 6,149 sanitary inspections made in 1923.

Births are apparently well reported. Records for communicable diseases could be obtained for six years. The ratio of cases to deaths would indicate that with the exception of typhoid fever and tuberculosis, communicable diseases are well reported. The number of deaths from tuberculosis each year is greater than the number of cases reported.

Vaccination is not required before children may attend school. A few

persons were vaccinated at the Health Department in 1923, and a few doses of toxin-antitoxin were given.

The health officer has made a goiter survey of the school children.

The large venereal disease clinic, begun by the United States Public Health Service and later taken over by the Health Department, has but little follow-up work, other than of the police supervision type, which aims to see that treatment is continued as long as necessary.

HEALTH OF THE SCHOOL CHILD

Three nurses, employed by the Board of Education, are looked upon also as health education supervisors as well as nurses. They try to make a physical inspection of every child each year. Children with physical defects are referred to the family physician or taken by the nurses to a dispensary. The surveyor was unable to obtain a record of the number of corrections that had been obtained during the year. All children are weighed twice a year and those in the "opportunity classes" are weighed once a month. The nurses meet these classes twice a week and give them special health talks. Two of the schools have arranged with the state normal school for observation and model teaching, and efforts are made in all the schools to correlate health teaching with a wide variety of other subjects. Milk is available in all the schools and in several schools a noon lunch is available with a special effort to use this opportunity to form good habits in food selection, and so forth.

PRIVATE AGENCIES

The Child Welfare Association has been doing a wide variety of educational work for several years and has been unusually successful in obtaining cooperation from many other volunteer agencies. Among the things they have been interested in promoting in recent years are health education and milk lunches in the schools, the provision of playground directors and the maintenance of infant welfare clinics. The Visiting Nurses Association has cooperated in these clinics. About 75 children were registered in these clinics during the year, and 475 home visits were made by the nurses.

The staff of the Nursing Association consists of a director, seven nurses and a stenographer. They receive some support from the county, the city, and various industrial concerns and give clinic and first aid service in return, but the large proportion of their work is bedside nursing on a district basis. There is no pre-natal clinic but the nurses are doing a good deal of home visiting to give simple instructions to prospective mothers.

The County Tuberculosis Association employs one nurse to do educational work with tuberculosis cases. Those needing bedside nursing are turned over to the Public Health Nursing Association. A clinic is conducted once a month with a physician in attendance. In the summer of 1923 a fresh air camp was opened and financed by various private and official agencies.

Many of the social agencies are members of the Terre Haute Welfare League. Funds for all the agencies are obtained through this League and some headway has been made towards standardizing the work of the organizations. There is also a Social Service Exchange, attempting to prevent overlapping of effort.

The Fresh Air Mission conducts a summer camp for mothers and children. The Rose Orphans' Home is an endowed institution for children over three years of age. The Home is on the cottage plan with thirty children and two matrons in a cottage. A herd of cattle and a two-acre vegetable farm supply food for the home.

COMPARISON WITH OTHER CITIES

There are two or three instances of unusual interest and vision in health work in Terre Haute, but for most of the eleven major activities, as shown in the accompanying chart, the city falls into the lower group.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H★		
V. D. Control	H	.....		★
T. B. Control	P★		
Pre-natal	★		
Infant	P★		
Pre-school	P★		
School	E★		
Sanitation	H★		
Laboratory	★		
Pop. Health Inst.	H-P	.....		★

¹See page 273.

There is no laboratory in the Department of Health. Obviously it is unsatisfactory to send milk samples to an out-of-town laboratory in hot weather, or to wait for the necessary time to elapse before receiving a report on a diphtheria culture.

The scope of the school health work is limited by the lack of a physician on the staff. There exists, however, under the direction of the nurses an unusually wide variety of health teaching projects in the schools. A step in the direction of securing a completely coordinated health program for both official and private agencies has undoubtedly been made in the unification of the private agencies in Terre Haute.

TOPEKA, KANSAS

Surveyed, May 5-10, 1924

Topeka, the capital city of Kansas, lies in the northeastern part of the state, 67 miles west of Kansas City. It had a population in 1920 of 50,022 and an estimated population in 1923 of 52,555, of which 9 per cent were colored and 8 per cent foreign born. The city covers 12 square miles and is traversed near its northern boundary by the Kansas River. That the city is enjoying a healthy growth is shown by the improvement made in the planning of streets and also in the development of municipal parks, of which there are nineteen at present, either within or near the city limits.

Among the industries of Topeka, flour-milling and railroad shop work are the most important. It is estimated that the shops give employment to about 6,000 men and that 7,500 more are employed by the railroads in other branches. Meat and poultry packing, butter and ice cream production make it well known as a food distributing point.

DEPARTMENT OF HEALTH

The local government is in the hands of a mayor and commission of four members who apparently enjoy the confidence of the citizens and are putting forth an unusual effort toward a clean and progressive administration. The municipal health activities are administered under the Commissioner of Parks and Public Property. The health officer, a physician with public health experience, devotes his entire time to the administrative and clinical duties of the Department. There is also a Board of Health consisting of two of the city commissioners, the health officer and two physicians, which possesses advisory and some administrative powers.

The budget of the Department for 1923 amounted to \$30,395, distributed as follows:

Health Administration	\$19,135
Food Inspection	9,680
Plumbing Inspection	1,580

This is about 58 cents per capita.

The personnel of the Department besides the health officer consists of two nurses doing communicable disease and venereal clinic service; three sanitary inspectors, four food inspectors, one bacteriologist and two clerks. The

vital statistics of the city are filed with the city clerk whose records are easily available for the use of the health officer.

The laboratory service is apparently of unusual quality. In scope it covers all the ordinary public health laboratory examinations, with the exception of Wasserman and darkfields, and the volume of work would indicate that the Department and local physicians are making use of this valuable service.

The bulk of the milk supply of Topeka is produced in such close proximity to the city that the producers themselves distribute the supply. In 1923 there were 63 concerns distributing bottled milk in the city, only two of which were pasteurizing the product. The pasteurized milk amounts to about 40 per cent of the entire supply. Though 90 per cent of the supply (all of the raw milk) comes from tuberculin tested cows, the city is not adequately protected against milk borne outbreaks of communicable disease. Public health history contains many instances of milk borne epidemics of the various communicable diseases and although laboratory and inspection service have demonstrated their value in improving general quality of the milk supply they are not sufficient as a safeguard against chance infection. Here only well regulated pasteurization will suffice.

PUBLIC HEALTH NURSING

The nursing service in Topeka, though not a part of the Health Department, is still a public agency supported by direct taxation under a special enabling Act permitting a levy not in excess of one-fifth of a mill for this service. The Topeka Public Health Nursing Association administers this fund, amounting to \$14,000, and conducts in close cooperation with the Department of Health a series of maternity, infant and child welfare clinics. The Association supervises all of the visiting nursing service in the city and in fact the only nursing service not under its supervision is in the public school system.

HEALTH ACTIVITIES IN THE SCHOOLS

Good current practice demands that the school child should have a thorough physical examination by a physician as the foundation upon which a sound program of health education and physical development may be built. In Topeka such an examination has not yet been provided although there is an annual inspection by the nurses who find some remediable defects and a number of cases of contagious diseases. The correction of the defects found is accomplished by nursing follow-up and is apparently well done.

There are a few instances where health education is being carried on in individual rooms or schools, but no attempt had been made at a city-wide program.

The Parent-Teachers Association is devoting its energies to improve-

ment of public school buildings and grounds, which in several instances are inadequate.

COMPARISON WITH OTHER CITIES

The relative position of Topeka in each of the eleven major divisions of a community health program is shown in the accompanying chart:

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	H	.....		★
T. B. Control	O	.....		★
Pre-natal	O★		
Infant	O	.....		★
Pre-school	O★		
School	E	.....	★
Sanitation	H	.....	★
Laboratory	H	.....		★
Pop. Health Inst.	H-O-P	.....		★

¹See page 273.

Some of the outstanding needs of public health work in Topeka are the establishment of a health service to reach the pre-school age child;—better protection of the milk supply by pasteurization of a larger proportion; and improvement of the health supervision of school children by the addition of the services of a physician. Excellent supervision over cases of communicable disease exists, but immunization as a means of prevention has not been greatly developed.

WEST HOBOKEN, NEW JERSEY

Surveyed, April 21-26, 1924

West Hoboken is located on a high bluff a quarter of a mile west of the Hudson River, and adjoins the cities of Hoboken and Jersey City. The city is one and a half miles long by about a half mile wide, and covers an area of 0.85 square miles. The streets are all paved, and Palisades and Hudson Boulevards, two wide attractive streets, practically form the east and west boundaries of the city. For transportation facilities it depends on the railways serving Jersey City and Hoboken, and trolley and motor bus service.

The city is essentially residential; industries are almost entirely confined to those garment manufacturing processes which can be carried on in the homes. The census figures show a population of 40,074 in 1920, of which 55 per cent were foreign born. The estimated population in 1923 was 41,758.

MUNICIPAL ORGANIZATION

The city is governed by a mayor and council of six members, this body being referred to as the town council.

DEPARTMENT OF HEALTH

The Board of Health consists of five members, who are appointed by the town council, for a period of three years. Each year the terms of two members expire. All appointments to the Department of Health are made by the Board, with the exception of the health officer, who is appointed by the town council.

The present health officer, licensed by the State, is a sanitary inspector who has been in office for 15 years. Other personnel in the Department are a plumbing inspector, an office assistant, three nurses for maternity and child welfare work, one of whom is supervisor, and two physicians, one for pre-natal and the other for child welfare work in the clinics. All of the foregoing are full-time employees, with the exception of the two physicians.

The appropriation for the Health Department in 1923 was \$11,000 or 26 cents per capita.

Most of the organized health activities in the community are conducted

by the Health Department; these include vital statistics, in charge of the local registrar (the Health Officer), communicable disease control, sanitation (which includes nuisance, food and sanitary inspections, water and milk control), and pre-natal, infant and pre-school age child welfare work. There is no laboratory in the local health department.

The Board of Education is responsible for the supervision of the health of the school child. Tuberculosis control service is furnished by the county. No provisions are made for a venereal-disease service.

Although the vital statistics are filed in the Health Department, the information which can be derived from them is apparently not fully utilized. No classifications are made of either deaths or births, and there is no periodic report issued by the Health Department containing the usual studies of vital statistics.

Communicable disease control work is handled entirely by the health officer. The Health Department does not maintain a consulting diagnostic service for doubtful cases. Laboratory diagnoses are made in some cases, through the state laboratory. Children must be vaccinated before they can attend school. Free immunization against smallpox and diphtheria is readily available but no decided effort is being made to promote the use of toxin-antitoxin.

The problem of milk supply control receives only slight attention from the Department of Health. No dairy inspections are conducted, nor are laboratory analyses made. There are no pasteurizing plants in the city, but the requirements of licensing of wagons distributing milk gives the Department a method of supervision. It is estimated that about 95 per cent of the supply is pasteurized.

The maternity and child welfare service, which has been in operation since 1916, is particularly interesting. The accomplishment in this division of the Health Department places the city among the cities in the upper third for pre-natal, infant and pre-school age child health work. Clinics are held on the first floor of a store building, which although centrally located, does not provide adequate quarters for the numbers attending.

Pre-natal clinics are held once a week with a physician in attendance for two hours. During 1923, there were 64 new cases registered. No figures were available indicating the number of home visits made by the nurses, but approximately 8 per cent of the total births in the city were reached by this service. There are no hospital beds available for maternity cases, except a maternity home with 12 beds, which is operated by a midwife. More than half the total births are attended by midwives, who are registered by the state, and are under some supervision.

The infant welfare clinics which also include the pre-school age children, are held five times a week, for two hours each, with a physician attending. As babies from the neighboring cities of Union Hill and North Hudson are frequently admitted, it is difficult to determine the attendance from West

Hoboken alone. During 1923 there were 1,301 children under three years of age observed, and the nurses made 914 visits to homes in connection with the infant welfare service. It is estimated that from 80 to 90 per cent were local cases, and that about 900 were infants under one year of age. There were 160 new cases of three to six years of age in 1923.

HEALTH OF THE SCHOOL CHILD

There are six public grade schools with an enrollment of 6,102 and three parochial schools. The staff provided for medical examination of school children consists of three part-time physicians, one part-time dentist, and six nurses. Examination of each child annually is planned. Examinations are made at the rate of 25 to 30 an hour by the physicians, the nurses assisting by making vision and hearing tests, height and weight measurements, and so forth. Printed notices of defects found are sent to the parents. During 1923, 6,857 children were examined, 3,854 of whom were found to have defects, which includes 2,537 children with dental defects. Records are not available showing the number of corrections for the various defects, but 2,828 are reported to have received treatment, 1,126 as improved, and 1,702 as corrected. The dental work reaches all grades and during 1923 included 836 fillings, 1,765 extractions, and 758 cleanings.

All children are weighed and measured once a year, while those who are 7 per cent or more underweight are weighed weekly, and records sent to the parents. There are six nutrition classes conducted for underweight children. Health education, which is started in the first grade, is based on the course outlined by the state, and is supervised by the school nurses. A health honor roll is kept in each class, which carries the names of those children who pass the morning inspection for five successive days; failure to pass for one day, causes removal of a child's name. A few attempts are made by individual teachers to correlate the health teaching with other courses.

PRIVATE AGENCIES

The Hudson County Tuberculosis Association conducts a clinic in Weehawken, a neighboring city, and during 1923 there were 123 West Hoboken patients at the clinic, 75 of whom were children; 182 home visits were made in the city by nurses, and 14 patients from West Hoboken were hospitalized by the state.

The Rotary Club of North Hudson, and the local Elks organization are interested in work for crippled children.

COMPARISON WITH OTHER CITIES

West Hoboken ranks among cities in the upper third in four of the 11 major health activities, among the middle cities in two activities, and among the cities in the lower third in five.

The contemplated amalgamation with Union Hill will necessarily affect any plans for the organization of health activities in the community.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P★	★	
Pre-natal	H	.....		★
Infant	H	.....		★
Pre-school	H	.....		★
School	E★		
Sanitation	H	.....		★
Laboratory	O★		
Pop. Health Inst.	★		

¹See page 273.

WHEELING, WEST VIRGINIA

Surveyed, February 25-29, 1924

Wheeling lies on the Ohio River about 50 miles below Pittsburgh, in the little wedge of West Virginia that extends between Ohio and Pennsylvania. The river separates the city from Ohio. Wheeling proper stretches along the bank of the river for several miles and also covers a large island in the middle of the stream. High cliffs overlook the city from both sides of the river, and some of the residential sections have moved out into a chain of valleys east of the old city proper. These latter settlements were added to the corporate city in 1920.

The population in 1920 was 56,204 of which 3 per cent were negroes and 10 per cent foreign born. The present population is about 60,000.

Wheeling is a coal mining and steel manufacturing community. The entire valley in which the city proper is located is filled with a pall of smoke, in marked contrast to the clean air in the chain of suburbs in the other valleys.

Other industries include car shops, lithographing, pig iron, flour, tobacco, brick and fire clay products.

Wheeling has the usual one- and two-family type of house. There is a preparatory school for boys and one for girls, and a State Normal School at West Liberty near by.

A bond issue of \$1,000,000 is now being spent on the improvement of streets, water mains and sewers.

The city library contains an unusually large number of health books.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The health commissioner, a physician, appointed by the city manager for a term of two years, has been re-appointed four times. He is assisted by one nurse, three sanitary inspectors, and a food inspector, all full-time employees, and a part-time bacteriologist and a part-time veterinarian. The appropriation, exclusive of that for garbage disposal, was \$22,000 for 1923 or about 39 cents per capita. There was an additional appropriation of \$47,000 for garbage disposal.

Satisfactory vital statistics records have been achieved in the last few years and the health officer expects that Wheeling will soon be included in the death registration area. Registration of births seemed to be unusually complete.

There is a satisfactory routine control of communicable disease, but apparently little effort is made to educate the public concerning the importance of immunization. In 1923 there were 699 persons vaccinated against smallpox. There is no official record of diphtheria immunizations.

Great stress is laid on the control of venereal disease. There were 4,165 treatments given at the Health Department clinic in 1923. At the time of the survey there was no organized tuberculosis control, but the construction of a sanatorium was being considered.

HEALTH OF THE SCHOOL CHILD

There is a part-time physician and a staff of seven nurses for the 11 public schools in Wheeling proper. Children are given a rather rapid physical inspection annually by the medical inspector, assisted by the nurses. The nurses devote a large part of their time to following up cases into the homes and securing correction of physical defects.

The remaining schools are located in the chain of valleys which comprise the suburbs of Wheeling, but which are within the corporate limits of the city. These are under the county superintendent of schools. They have no school medical inspector and only one nurse. There is no dental clinic in any of the schools.

A large amount of health education work is carried on by nurses and teachers in the schools. There is a definitely outlined course, but no one person directing the work.

There is a large amount of child labor in Wheeling, owing to the type of industries. No record could be obtained by the surveyor of the number of children applying for working permits.

PRIVATE AGENCIES

The visiting nurse work is done by the local Red Cross which has a staff of four nurses. In addition to bedside nursing they do some pre-natal and infant welfare work. This service is quite new, and at the time of the survey clinics had not yet been established. There is also one county infant welfare nurse whose salary is paid from Sheppard-Towner funds.

The Associated Charities maintain a dental clinic and one nurse who gives varied services.

MILK AND WATER SUPPLY

The milk inspection service is well organized; laboratory analysis and farm inspection are properly correlated. The bacterial counts of the various supplies are published in the newspapers.

For many years Wheeling has endured a very turbid, reddish yellow water supply taken directly from the Ohio River. This water is heavily chlorinated and the bacterial count is low, but it is so unattractive in appearance that many people use well supplies with a resulting high morbidity and

mortality from typhoid fever. At the time of the survey, Wheeling was spending \$2,000,000 on a modern purification plant so that by the time this report is made public there should be a vast change in the water situation.

COMPARISON WITH OTHER CITIES

The accompanying chart shows that Wheeling ranks in the upper third of cities in five of the 11 major activities. No organized work is being done in tuberculosis control, but some effort is being put forth in each of the other 10 activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹★		
Com. Dis. Control	H	.....	★
V. D. Control	H	.....		★
T. B. Control	★		
Pre-natal	P	.....	★
Infant	P★		
Pre-school	P★		
School	E	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H	.....		★

¹See page 273.

It would seem desirable to have the Health Department develop a maternal and child hygiene program with properly organized clinics, taking into account the work already begun by the Red Cross. Such a program, together with a tuberculosis service, would give Wheeling a much better balanced Health Department.

WICHITA FALLS, TEXAS

Surveyed, February 4-9, 1924

Wichita Falls, the county seat of Wichita County, is located in the northwestern part of Texas. The greater part of the city lies south of the Wichita River. The city is the oil center of north Texas, and has grown rapidly, primarily as a result of an oil boom in 1919. There are 21 refineries. The population in 1910 was 8,200 and increased to 40,079 in 1920, of which 4 per cent were foreign born. Of the foreign born 2 per cent were Mexicans. The estimated population in 1923 was 51,500.

The city is served by seven railway lines, and is a distributing center for the rich agricultural and oil regions of northwest Texas and southern Oklahoma. In addition to oil refining, other industries are flour milling, the manufacture of motor trucks, fruit jars, window glass, brick and tile, and railroad and machine shops. A recently completed irrigation project will provide water for 150,000 acres of land in the vicinity.

DEPARTMENT OF HEALTH

The city is governed by a mayor and commission of five members, which acts as a board of health. The director of the Health Department is appointed by the commissioner of sanitation, for a two-year term, and is confirmed by the whole commission. The position is a full-time one and has been held since 1919 by a veterinary surgeon with special training in chemistry. Other personnel in the Health Department are a dairy and food inspector, a sanitary inspector, and the city physician, all of whom are full-time employees. In addition to administrative duties, the director of the Health Department does the analyses of milk and water, and makes the sanitary inspections.

The duties of the city physician include treatment of the city poor, the control of communicable disease and the treatment of referred cases of venereal disease. The present city physician has also been appointed registrar of vital statistics by the State Department of Health. He receives no extra remuneration for the vital statistics work.

Deducting the items of incinerator and scavenger service, which amount to \$8,309, from the total appropriation of the Health Department, the appropriation in 1923 was \$11,331 or about 22 cents per capita.

Births, deaths and cases of communicable disease are reported to the

city physician. No compilations, it seems, are made of the information recorded. To obtain information on infant mortality for 1922 and 1923, it was found necessary to refer to the original records. The birth records are apparently incomplete. The communicable disease reporting is also unsatisfactory; records were found to be available beginning only with March 1, 1923.

On the basis of achievement in communicable disease control, the city occupies a position next to the lowest of the 86 cities surveyed. No spot maps or weekly charts of cases are kept. No vaccines are readily available. Practically nothing is done to promote the use of toxin-antitoxin. Vaccination against smallpox is not a requirement to attend school.

There is no organized venereal disease service; prophylactic treatment of babies' eyes is not required. There is no tuberculosis service.

Sanitary inspection and dairy and food inspection seem to be the functions receiving greatest emphasis. It is said that practically all milk is derived from tuberculin tested cows and that about 35 per cent of the supply is pasteurized. Bi-monthly bacteria counts are made. The water supply of good quality is publicly owned and almost universally used. It is derived largely from the Holliday Creek, and is safeguarded by police supervision of the shed. Bacteriological examinations are made daily. About 90 per cent of the dwellings have sewer connections.

CHILD WELFARE

The service which exists for infant and child care is extremely limited, and is furnished by two nurses of the Public Health Nursing Service of the American Red Cross. There is no organized service for pre-natal care, or for pre-school age children. Monthly conferences are conducted by the nurses for infants in two districts, and in one of these districts during the summer only. A physician is in attendance, and follow-up visits are made by the nurses. The attendance in 1923 was small, 70 infants having been observed. No record was available of the number of visits made by the nurses. This is a condition which indicates the necessity of greater attention to infant welfare, and also to the care of the expectant mother.

Physical inspection of school children, with follow-up to secure correction of remediable defects, is conducted by the two Red Cross nurses. Prior to December, 1923, this service included the entire county. There is no medical examination. Children are weighed once a month, and the classroom record is maintained and kept up to date. In one school the principal has organized a growth class for undernourished children. The method of teaching civics by student administration is used, and includes the appointment of a student health officer, with cleanliness inspections each morning.

PARENT-TEACHERS ASSOCIATION

There are well-organized mothers' clubs in the schools. They have contributed to the child health program by furnishing scales and playground equipment and helping in the operation of school cafeterias, and in serving lunches.

MUNICIPAL WELFARE BOARD

This is a committee organized by the Chamber of Commerce to conduct an annual drive for the support of various private organizations and institutions. Approximately \$40,000 is collected each year, \$8,000 of which is assigned to the American Red Cross.

COMPARISON WITH OTHER CITIES

Wichita Falls ranks among cities in the lower third in seven of the eleven major health activities, and among those in the middle third in the four other activities. It fails to reach a position in the upper third in any activity.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	★		
Pre-natal	★		
Infant	P★	★
Pre-school	★		
School	P★	★
Sanitation	H★	★
Laboratory	H★		
Pop. Health Inst.	H★	★

¹See page 273.

Before Wichita Falls can rise above its present position money must be made available for broadening the scope of public health work. Furthermore, it is essential that there be better team work among the volunteer organizations.

WINSTON-SALEM, NORTH CAROLINA

Surveyed, May 5-10, 1924

Winston-Salem, the largest city in North Carolina, began its existence as two separate towns. Salem was founded about 1766, and Winston about 1870. In 1913, by a vote of the people, these two towns were consolidated and became Winston-Salem. The population in 1920 was 48,395. Since then additional territory has been annexed so that the population is now between 70,000 and 75,000. This includes 43 per cent negroes, and less than 1 per cent foreign born.

The city lies upon rolling hills. The streets have many shade trees, and about 80 per cent of the street mileage is paved. The individual dwellings are attractively built. The negro districts are separated from the white, but they have the same municipal improvements as the white districts.

Tobacco products are the chief industry. Winston-Salem leads the world in this respect. Other industries include the manufacture of knit underwear, furniture and wagons.

DEPARTMENT OF HEALTH

The Board of Health, consisting of the mayor, the health officer, and three others, is appointed by the mayor and Board of Aldermen. The health officer, who is also appointed by the mayor and aldermen, serves for an indefinite term. The present health officer has been in office eight years. He is a physician with public health experience. He is assisted by two secretaries, twelve nurses, two sanitary inspectors, two food inspectors, one milk inspector, a bacteriologist, a city physician, a school physician, three part-time physicians and a part-time dentist who attend clinics.

The Health Department occupies an entire building near the center of the city. The latest annual appropriation for the fiscal year ending June 30, 1923, was \$52,976. This is about 90 cents per capita, excluding from the population that section which has recently been added to the city.

The Health Department seems to be well balanced, and to be doing excellent work. Vital statistics are intelligently kept and all figures are up-to-date and incorporated into a worth-while annual report.

There are clinics for tuberculosis, venereal disease and infant welfare, and dental clinics for school children. One nurse supervises the work of 11 other nurses whose time during the week is divided approximately as follows:

Tuberculosis	88	hours
Infant Welfare	84	"
Communicable disease	60	"
General bedside care.....	66	"
Venereal disease	16	"
Schools	130	"

The tuberculosis and venereal disease clinics are fairly well attended. There were 761 children who received attention in the child welfare clinics in 1923. There is no organized pre-natal clinic, but 256 visits were made to expectant mothers by the nurses in 1923.

Smallpox has been rather prevalent in Winston-Salem. The number of cases reported each year has varied during the last five years from a minimum of 40 to a maximum of 597. There were 4,474 persons given free vaccination by the Health Department during 1923 and 846 persons were immunized against diphtheria.

HEALTH OF THE SCHOOL CHILD

The school medical inspection work is also directed by the health officer. The school physician and the health officer examine the children at the beginning of the school year and once again later in the year. The nurses also make some inspections and devote a portion of their time to follow-up work.

Considerable attention is given to nutrition classes and a full-time nutrition worker, supplied by the Red Cross, spends all her time in the schools. A full-time health education director devotes practically all her time to the Health Crusade of the National Tuberculosis Association. There are about 4,000 children enrolled in the Crusade. The Parent-Teachers Associations have always been ready to cooperate with the Health Department.

Playground space and apparatus are adequate. The colored school buildings are better than those observed in other southern cities.

The Health Department acts as the local Tuberculosis Association and takes charge of the annual seal sale, assisted by various clubs in the city.

The Way Side Workers, a relief organization, furnishes one full-time nurse to the Health Department for miscellaneous visiting nurse activities.

CHILD LABOR

Child labor in Winston-Salem seems to be rather prevalent but in the opinion of various local persons there are adequate laws, properly enforced, governing it. In 1923 there were 1,602 children examined and 1,552 working permits issued.

SEWERAGE

Nearly 100 per cent of the city is sewered. The present sedimentation tank, through which sewage is run before it empties into Salem Creek, is

inadequate and steps were being taken to float a bond issue to correct this difficulty.

COMPARISON WITH OTHER CITIES

Practically all the health work of the city is centered in the Health Department. As will be seen by the accompanying chart, Winston-Salem stands among the upper third of cities in eight of 11 major health activities.

The least developed parts of the health program are those dealing with pre-natal, infant and pre-school work.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	H ¹	.....		★
Com. Dis. Control	H	.....		★
V. D. Control	H	.....		★
T. B. Control	H	.....		★
Pre-natal	H★		
Infant	H★		
Pre-school	★		
School	H	.....		★
Sanitation	H	.....		★
Laboratory	H	.....		★
Pop. Health Inst.	H-P	.....		★

¹See page 273.

It would seem desirable, also, that the scope of the health education work in the schools should be extended.

WOONSOCKET, RHODE ISLAND

Surveyed, May 26-31, 1924

Woonsocket is located on the Blackstone River, which winds through the city. The surrounding country is rolling and wooded. The city is 16 miles northwest of Providence, and about 39 miles southwest of Boston.

The city is essentially a mill town, and is pre-eminent in the production of textile articles, manufacturing such products as woolen, worsted and cotton yarns, cotton, woolen, worsted and plush piece goods, silks, satins and other woven fabrics. The manufacture of textile machinery and appliances, special machinery and rubber goods are also important industries.

The city was first settled about 1666, and was chartered in 1888. The population in 1920 was 43,496 of which 37 per cent were foreign born whites. The foreign group is composed very largely of French-Canadians; there is also a large Polish, Italian and Slavic element. The extent to which child labor is used is indicated by the fact that approximately 19 per cent of both males and females between the ages of 10-15 years were engaged in gainful occupations. The population in 1923 is estimated to have been 45,432. The present area is about 9 square miles.

DEPARTMENT OF HEALTH

There is no board of health or advisory council. The part-time health officer, is appointed by the Board of Aldermen for a term of two years. The present health officer is a physician in private practice who devotes probably not more than three hours a week to his official duties. The only other employees in the Health Department are three deputies appointed by the Board of Aldermen. Their duties are limited to the investigation of nuisance complaints, and placarding, quarantining and fumigating in cases of communicable disease.

No office quarters are provided for the Health Department by the city, the private office of the health officer being used for that purpose. In 1923, \$2,775 was appropriated for the Health Department, of which \$2,400 was for salaries, and \$375 for supplies; the per capita cost was six cents.

The control of communicable disease is not as extensive as that found in many other cities surveyed. On this basis, the city ranks among the lower 29 cities. Cases of communicable disease are reportable to the Health Department, but the reporting, it seems, is not complete and therefore unsatis-

factory. Spot maps and weekly charts are not used. Cases of scarlet fever and of diphtheria seem to be the only diseases receiving the attention of the health officer and the deputies. Free immunization is available against smallpox, diphtheria and typhoid, and smallpox vaccination is a requirement to attend school. In 1923, approximately 2,500 persons were vaccinated. An anti-diphtheria campaign has been conducted in the schools by the State Department of Health and during the last 12 months about 2,250 children had been Schick tested and 1,200 immunized.

Sanitation is the other activity in which the Health Department engages. The work of the department is limited to nuisance inspection. In 1923, only 150 such inspections were made. There is apparently no inspection of food handling establishments. Dairy and milk supply control is handled by the part-time milk inspector, who is not an employee of the Health Department. This position is now held by a veterinarian; in 1923, \$800 was appropriated for him, which included his salary and supplies. Dairies are inspected at infrequent intervals, and on such occasions a score card is not used. Only about 10 per cent of the milk is pasteurized, and certified milk is not available; less than 20 per cent is delivered in sterilized bottles. Bacterial analyses are not made, and chemical tests are made infrequently. The inadequacy of the supervision and control of the milk supply has been recognized, and publicity has been given to conditions existing in an effort to improve the quality of milk furnished.

The public water supply, practically universally used, is chlorinated, and seems to be safe from a bacteriological standpoint. Laboratory control is furnished by the State Department of Health, which makes monthly chemical and bacteriological examinations. About 50 to 60 per cent of dwellings have sewer connections; there are some open privies in use in the city.

OTHER AGENCIES AND ACTIVITIES

The major part of the health work done in the community is handled by agencies other than the Health Department.

The city clerk handles the registration of births and deaths. There is no annual report on vital statistics issued by the city. The usual classification of births and deaths is not made, and the value which can be derived from the study of the records by the Health Department is apparently lost.

There is no provision for the control of venereal disease; this service was discontinued on May 1, 1924.

The Woonsocket Public Health Nursing Association, a private organization, conducts most of the clinical service in the community, in addition to public health nursing work. The Association consists of nine graduate nurses, one of whom is superintendent, and one pupil nurse. The cases handled are pre-natal, obstetrical, infant welfare, surgical, medical, and tuberculosis. Clinics for tuberculosis and infant welfare are also conducted.

The annual budget of the Association is \$18,500, of which \$1,000 is obtained from the city.

Tuberculosis clinics are held once a week, with a volunteer physician attending. The full-time of one nurse is assigned to tuberculosis work. In 1923, a large volume of home visiting, including educational and bedside care, was done; 1,319 such visits were made. There were 113 patients observed at the clinics and 44 patients were hospitalized in the state sanatorium. Preventive measures, such as preventorium beds, nutrition classes, and so forth, do not exist.

No pre-natal clinics are held, the work done in this field consisting of home visits by the public health nurses. In 1923, there were 182 pre-natal cases under the supervision of the Association. It is evident that in a city with 1,388 births only a small number of expectant mothers are reached by this limited service.

The infant welfare clinics are of recent origin, having been organized on May 1, 1924. They are held once a week for two hours, with a paid physician in attendance. The physician is changed very frequently, since there is an arrangement in effect by which each member of the Woonsocket Medical Society is assigned to this work for one month. A considerable amount of infant welfare work was done in the field by the nurses prior to the establishment of the clinics. In 1923, there were 5,507 home visits made.

The pre-natal and infant welfare work done by the Public Health Nursing Association is supplemented by the work of a full-time nurse assigned by the Division of Child Welfare of the State Department of Health; every birth recorded is visited at least once, and if it is desired, visits are paid at regular intervals. The service is extended to include the child of pre-school age also.

The necessity of organized pre-natal and infant welfare work as a means of combating the unusually high infant mortality rate in the community has been recognized. To secure satisfactory results will probably involve the extension of the service now provided to include clinics for pre-natal cases and the pre-school child in addition to those for infants, together with adequate nursing follow-up work.

HEALTH OF THE SCHOOL CHILD

The staff provided by the Department of Education for the medical supervision of the school child is large, but the work done is evidently unsatisfactory judging from a statement to that effect in the annual report of the superintendent of schools. There are eight part-time physicians, each of whom receives \$125 a year, six part-time dentists, each receiving \$100 a year, and a full-time nurse. In 1923, there were 5,240 inspections made by the school nurse, as compared with 1,594 examinations by the eight physicians. There is an annual physical inspection by the nurses, and the doctors are supposed to examine those pupils referred to them by the principals. The examinations are made at the rate of about two or three a minute; a

stethoscope is not used. The report previously mentioned states, "The medical inspectors have not performed their work in accordance with the rules." There is no record available showing the results of the work done by the physicians in 1923, due to their failure to comply with the law requiring these reports.

Height and weight measurements are made in only two of the 20 public grade schools. Scales are provided in these two schools only. No mid-session milk lunches are provided; there are no nutrition or open-air classes. Practically nothing is done for the underweight child. The health instruction consists of an organized course in hygiene; there is practically no correlation between this subject and other courses. Little Mother League classes have been organized in the sixth grade and in 1923 there were 490 children enrolled. The inadequacy of school playgrounds is commented upon by the superintendent of schools in the report for 1923.

Dental inspection seems to be disorganized and ineffective. The work of the six part-time dentists consists merely of inspection for defects, the recording of those found, and the recommendation of treatment. No corrective work is done by the dentists, and no clinic is provided. There is no effective follow-up system to secure correction of defects. The need for such a service is indicated by the fact that of the 4,167 children reported examined in 1923, treatment was advised for 3,324.

The deficiencies and unsatisfactory character of the medical supervision in the schools are obvious. Some are mentioned by the superintendent of schools in his annual report for 1923, and a reorganization of the numerous, part-time personnel is recommended by him to secure more desirable results.

COMPARISON WITH OTHER CITIES

Woonsocket attains a position above the lower 28 cities in only two of the 11 major health activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H★		
V. D. Control	★		
T. B. Control	P	.....	.....★
Pre-natal	O-P	.....	.....★
Infant	O-P★		
Pre-school	O★		
School	E★		
Sanitation	H-O★		
Laboratory	O★		
Pop. Health Inst.	★		

¹See page 273.

Practically no provision is made for the control of the milk supply; for adequate medical examination of school children; or for laboratory work in communicable disease control. All of these matters are of fundamental importance in a municipal health program.

YORK, PENNSYLVANIA

Surveyed, February 25-29, 1924

York, situated approximately 100 miles west of Philadelphia, and 28 miles southeast of Harrisburg, lies in a broad valley in the south central part of Pennsylvania. It is a commercial center for a rich agricultural region, and is also an industrial center. The principal manufactories are ice making and refrigerating machinery, water turbines, agricultural machinery, artificial teeth, commercial auto bodies, pianos, silk, hosiery, and wall and roofing paper. It leads all other cities in the United States in the manufacture of cigars, its products being $\frac{1}{8}$ of the total product of the country. It is asserted that, compared with other cities in the state, York has the greatest percentage of its population gainfully employed. The first settlers were chiefly Germans, as were those of Lancaster, the city which lies in close proximity to it. The city was laid out in 1741 and was chartered in 1887.

A public square, at the intersection of the principal streets, is the nucleus of the business district, which is compact and well developed. It gives an impression of progress and prosperity. The total area of the city is $3\frac{1}{2}$ square miles. The residences are single family brick dwellings for the most part, but in certain sections there is evidence of crowding. This condition is somewhat relieved by the presence in congested districts of numerous small parks and play areas. A small creek, which flows through the city, adds to its picturesqueness. The population in 1920 was 47,512, of which 3 per cent were negroes, and 3 per cent foreign born. The estimated population for 1923 was 48,506.

DEPARTMENT OF HEALTH

The City Council, the members of which are elected, consists of five members, one of whom is the mayor; it makes appointments to the Department of Health. The health officer, whose title is director of health, is elected for an indefinite term; the position is a part-time one. The present director of health has had almost thirty years of public health experience, and has been in office for the last five years. He devotes the major part of his time to public service, which is whole-hearted and progressive. Included in his staff are a full-time sanitary inspector, a half-time food inspector, and a full-time nurse furnished by the Visiting Nurse Association, who devotes her attention to contagious disease work, and, in emergencies, renders additional services as required. The major activities of the Department are com-

municable disease, food, and milk control. The budget of the Health Department for 1923 was \$8,100, or 17 cents per capita.

The local registrar is responsible for birth and death registration, and the Board of Education assumes the medical supervision of school children. The state furnishes mental, tuberculosis, and venereal disease clinics. The Visiting Nurse Association provides pre-natal, infant and pre-school care, including clinics and follow-up work in the home.

The foregoing indicates that the responsibilities for health work in the community are divided among numerous agencies; however, the cooperation necessary for good results exists, and York has succeeded in attaining a position among the highest 29 of the 86 cities surveyed.

The accomplishment in control of communicable disease is conspicuously high, and is marked by completeness in reporting, by thoroughness of the record-keeping, and by the extent of immunization against smallpox and diphtheria. Vaccination is required of children before they can attend school, and during 1923, 700 children and 395 adults were vaccinated against smallpox. Immunization of school children with toxin-antitoxin was started in May, 1923, and 800 children had been treated at the end of the school year. The work was discontinued until January, 1924, on account of obstacles presented, but has been renewed and is being encouraged by advertisements in newspapers and with the aid of the Mothers' Club. Clinics, which are satisfactorily attended, are being conducted in the schools and in private homes.

VISITING NURSE ASSOCIATION

The work of the Visiting Nurse Association is outstanding, both from the point of view of the scope of its activities and the volume of work done. All of the public nursing service in the community, both clinical and field, is rendered by this Association, with the exception of that furnished by the state in the venereal and tuberculosis clinics. In addition, the nursing service for the Department of Health and the Department of Education is also provided by the Association. The staff consists of 13 nurses, including the director. One nurse is assigned to the Health Department, for whom the city appropriates \$1,500, three are assigned to the Board of Education, for which the Association receives \$1,800 per year, and the other eight nurses devote half of their time to generalized bedside care, and half to maternity and infant welfare. All of the staff is under the supervision of the director, to whom the efficiency and harmonious functioning of the organization in its varied program is, in a large measure, due. The annual budget of the Association is approximately \$45,000, or 93 cents per capita.

The Visiting Nurse Association conducts clinics with physicians in attendance and follow-up work in the home for pre-natal, infant and pre-school child cases.

The clinics for pre-natal cases are held once a week for two hours at the

hospital. The scope of the work done is indicated by the 2,084 visits made to the homes by the nurses in 1923; it is estimated that 43 per cent of births in 1923 received supervision through this agency. Practically all of the maternity cases received post-natal supervision by the nurses to the extent of at least three calls in the home. One well-baby clinic is conducted during the winter for one hour a week. During the summer months, the number of clinics is increased to eight. These clinics are well attended; 741 infants were under observation in 1923. The sessions are held in the quarters of the Visiting Nurse Association, which are conveniently located, and attractive. A large volume of home visiting is done in connection with the clinics; during 1923, 5,523 visits to infant and pre-school children were made.

School medical supervision is furnished by a part-time physician, a dentist, a dental hygienist, and three full-time nurses, the nurses being furnished by the Visiting Nurse Association. Physical examination of each child is made annually, and height and weight measurements are made every three months. There is an organized health education course, which has recently been improved and developed; this provides for instruction in all the grades for 30 minutes daily. An effort is made to correlate this subject with other courses in the curriculum.

VITAL STATISTICS

In common with other cities in the state, the local registrar, who is in no way connected with the Health Department, handles the recording of births and deaths. Copies of the certificates are transmitted to the Health Department. The data furnished on them are not compiled, no classifications being made either of deaths or births. It is evident that under these conditions the full value of the vital statistics to the Health Department is not obtained.

SANITATION

Progress in the control of the milk supply has been made during the administration of the present health officer; a veterinary surgeon in the Health Department is the milk and dairy inspector. The laboratory supervision of the supply appears to be efficient. It is estimated that but 5 per cent of the supply is derived from tuberculin tested cows. At present approximately 50 per cent of all the milk is pasteurized, and determined efforts are being made to increase the percentage by ordinance.

The city ranks among the lower 28 cities on the basis of sanitation, which includes food and milk control, and sewerage. This position may be materially improved by an increase in the amount of milk pasteurized; and by the extension of sewer connections, which now exist for only about 35 per cent of the dwellings.

COMPARISON WITH OTHER CITIES

As indicated in the table below, the city ranks among the highest 29 cities in accomplishment in six of the 11 major health activities. In the five other

activities, it attains a position among the middle cities in one, and among the lower cities in four activities.

ACTIVITIES	CONDUCTED by	LOWER Third	MIDDLE Third	UPPER Third
Vital Statistics	O ¹★		
Com. Dis. Control	H-P	.....		★
V. D. Control	O	.....		★
T. B. Control	O★		
Pre-natal	P	.....		★
Infant	P	.....		★
Pre-school	P	.....		★
School	E-P	.....		★
Sanitation	H-O★		
Laboratory	H★		
Pop. Health Inst.	H	.....	★

¹See page 273.

The city is a conspicuous example of the harmonious division of responsibility for health work in the community among official and private agencies, whose work is well coordinated, efficient, and attains fair results.

Section IV

A Proposed Plan of Organization of Community Health Work for a City of 50,000 Population

SECTION IV

A PROPOSED PLAN OF ORGANIZATION OF COMMUNITY HEALTH WORK FOR A CITY OF 50,000 POPULATION *

INTRODUCTION

To fail to see the forest because of the trees is the classic description of the individual who is too close to his particular task to obtain a true perspective of its relation to other activities. Such a situation is truly characteristic of public health work, not only for the socially minded woman who becomes absorbed in the development of a visiting nursing service, or the superintendent of schools with a predilection for physical education, but even for the health officer who is not thoroughly alive to this danger.

Need for a Plan—A frequent question on the lips of such individuals, when faced perhaps for the first time with the question of the effectiveness of their particular work and its part in a balanced, well rounded health program for a community, has been "Well, what is a practicable health program for a city like this?"

Up to the present time there has been no carefully considered integrated plan that is sensible and feasible for the city of 50,000 population. A plan for an ideal health department for a city of 100,000 population was published in 1923 by the Committee on Municipal Health Department Practice of the American Public Health Association, and one based on the study of health practices in 21 Connecticut towns of from 10,000 to 30,000 population, was prepared in 1923 for a city of 20,000 population. Anyone familiar with the underlying characteristics of cities of 20,000, 50,000 or 100,000 will

* The Research Division has received an unusual amount of collaboration and advice in the preparation of this "Proposed Plan" for which it wishes to make acknowledgment. Based primarily upon the recommendations of the surveyors themselves, the tentative plan was further developed by Ira V. Hiseock, Associate Professor of Public Health, Yale School of Medicine. Members of the staffs of the American Social Hygiene Association, the National Tuberculosis Association, the National Health Council and the National Organization for Public Health Nursing, have given valuable advice on special phases of the Plan. The Division is particularly indebted to Miss Anne Stevens, general director of the latter organization, for her assistance in connection with the nursing section.

recognize that each is essentially a type true to itself with its own problems and its own geographic, psychological, financial and governmental characteristics. Because of this individuality of the city of 50,000, and because of the need for a carefully considered health program for a city of this size, it seemed particularly desirable, at the termination of the study of 86 such cities, that the Research Division of the American Child Health Association should give special consideration to the detailed means by which the health problems of this typical city could be met.

Plans Submitted by Surveyors—As a result of this conviction each surveyor at the termination of his study of 15 to 20 of these cities outlined what he considered a reasonable, effective health program such as any of these cities should properly have. The submitted plans were discussed in detail for several days and closely harmonized. Each section was then thoroughly discussed with representatives of the national organizations particularly interested in special phases of public health. The plan was further revised in the light of the actual practices as found in the better cities of this group.

Practicability of the Plan—It cannot be emphasized too strongly that the plan about to be described is not so idealistic as to be impracticable. On the contrary there is no important phase of this plan that is not actually to be found in some one or more of these smaller cities. In fact, there are 10 or 15 of the 86 cities in which the development of health work is such that they could easily attain the provisions of this plan within a few years, given favorable conditions. In the meantime its value lies in the presentation of a brief for a practicable and reasonably complete community health program, with sufficient detail regarding procedure, personnel and cost, to give it something of the character of a builder's model. The plan may be studied in whole or in part. The director of any health activity, public or private, will find here a basis of comparison by which he may judge the organization and accomplishments of his own special interest. At the same time he will see that his special work is but a part of the whole. The health officer concerned in the development of a complete health service for his community should find in this plan a more concrete guide than he has possessed heretofore, and also a definite basis for study of the future development of community health programs.

Tendency Towards Standards, Values and Objectives—The rapid development of the public health movement in different localities

has produced a bewildering variety of administrative procedures, good, bad and indifferent, which are designed to accomplish similar purposes. Out of this confusion there is arising an encouraging tendency toward the development of minimum standards, with due consideration of relative values and definite objectives. The effective organization of adequate health machinery, public and private, is indeed essential for the health protection which American cities have a right to expect.

Necessity of Assimilating the Plan Slowly—The plan as outlined is in no sense intended to be taken as a hard and fast model. Intelligent modification and adaptation of it to the individual needs and developments in any city are assumed. The laws of nature, in administrative as well as in biological affairs, require that growth should be gradual, and the adoption of any plan of organization should be slow enough to provide for its proper assimilation.

The Principles Underlying the Plan—It is well to explain the principles underlying the formulation of this plan. There are certain features of public health work which are distinctly and exclusively matters calling for collective or official action—for example, the maintenance of a safe public water supply and the assurance of a pure milk supply. These are matters beyond the control of the individual citizen.

Then there are matters calling for public supervision and control which depend, however, for their real success upon intelligent individual cooperation. Communicable disease control is in this class.

There are other phases of public health work which are within the control of the individual but which are properly a function of the local government in that they are measures designed for the advancement of the public health and welfare. These relate to the customs and habits of life. The government's participation in these subjects is educational. The work of the various clinics and the public health nurses comes in this category. It is not expected that the local government through the department of health should shoulder all the personal health burdens of the community nor, in our democratic form of government, should it force people to be healthy. While advancement in personal health is indeed an individual matter, behavior that is harmful to the public health or that results in an additional burden and expense to the public is indeed a matter of general concern. The public is paying out large sums of money for hospitals

and sanatoria and asylums and homes for the indigent. Bad personal habits of living are partly responsible for increasing the population of these places and the educational work of health departments should be directed towards counteracting such results.

Beyond these considerations we must recognize in addition that it is proper and right that the government should exercise a benevolent attitude toward its constituents by rendering material aid to those who through misfortune are unable to provide adequately for themselves.

The proper balancing of these three lines of activity, the American people must work out for themselves.

This plan in its entirety contemplates that in those matters which are educational, the health program of a public or private health agency will be deliberately limited to a moderate proportion of the population. The aim of this work is to explain so effectively the possibilities and advantages of health that the public will be convinced of its value and will act in accordance with this conviction.

It is such a program, broad in its scope, but limited in its application, that is contemplated in the present plan for advancing the public health of the smaller city.

Private Agencies and County Unit Plan—In any event an outline of a community's health needs is here presented. The plan takes cognizance of the health work of private agencies as well as that of the official health agency. Moreover, it assumes that the various other municipal departments and agencies of the city government, such as the schools, the courts, the park and recreation departments, the department of public works, the department of charities and the public library—are not neglecting those phases of their work which have a health significance. While primarily organized on a municipal basis, the possibilities of adapting the plan to the County Unit plan of health administration have also been considered.

Cost not Excessive—Since the plan of organization of the health department includes all the major phases of public health activity, so many of which are often found under private auspices, it is obvious that the budget as outlined on page 606, will be higher than is customarily the case for health departments. However, if adjustment is made for the cost of hospitalization and the cost of the health work of private agencies, the expenditures of many cities will be found to approximate the total arrived at in this plan.

ORGANIZATION OF THE HEALTH DEPARTMENT
BOARD OF HEALTH

The proper organization of the health machinery of a community recognizes the desirability of a board of health as a definite part of the city government. It is generally considered good practice to have the members of this board appointed by the mayor. While the health officer should sit with the board at its meeting it seems best that he should not be a member of the board, but that he should be its executive officer.

Whether elective or appointive, the board might consist of five unpaid members, representing the professional and lay interests of the community. A reasonable composition of this board of health would be: a physician, a sanitary engineer, a forward looking business man, and a man and a woman with broad public interests. The election or appointment of these members should be for a period of four or five years, with provision for replacement of one member annually.

Broadly speaking, the function of the board should be to employ a health officer or commissioner of health, to formulate rules and regulations, consistent with those of the state, for the protection and promotion of community health, to act upon the annual budget prepared by the health officer, and to act as an advisory body to the health officer. Ordinarily the board should not exercise direct administrative authority, except in those cases where the personnel and local conditions make such an arrangement necessary. There are many advantages in holding regular meetings of the board, as for example, once a month. This tends to create a consciousness of responsibility.

ADVISORY COMMITTEE

In addition to the board of health, there might also be organized by the health officer a group of interested, public spirited citizens, independent of the municipal administration, to be known as the Advisory Committee on Public Health. Such a committee might be composed of either a few individuals selected by the health officer to be of particular assistance to him, or a number of individuals delegated at the request of the health officer by the various health, social, professional and business organizations. The primary purpose of this

committee should be to give sympathetic consideration to the problems of the health department as they affect the community at large.

Other Considerations—As previously indicated, there should be sanitary rules which are up-to-date, yet within legal limitations, and adequate means of enforcing the health code. This requires a staff of trained workers, suitably housed and adequately paid. It should be noted in this connection that the proper housing of the department is an important consideration which has been seriously neglected in many cities. Provision should be made in a central health building or elsewhere, for suitable space conveniently arranged to accommodate all the department bureaus and also to provide clinic rooms for special purposes.

HEALTH OFFICER

The administrative head of the department of health should be a person with special education and training in public health administration and in educational methods of health promotion. The health officer should have those personal and professional qualities which command the respect of the community and the hearty cooperation of the medical profession. In fact, the training of medicine alone or sanitary engineering alone, or any other scientific training alone, is not now sufficient, for it is realized that this position demands the full time of a person who has fitted himself through education and experience for administrative health work. The time has passed when the position of health officer can be regarded as a plum for the political favorite, or as an additional honor for an already busy physician.

METHOD OF ORGANIZATION OF HEALTH DEPARTMENT

As a general plan of organization, subject to fundamental modification in the individual case, the work and budget of the department of health may be discussed under the seven following subdivisions:

1. Administration and Records.

- Administration
- Public health education
- Vital statistics

2. Inspection.

- Food and milk
- Sanitation.

3. Laboratory.
4. Communicable Disease
 - Tuberculosis
 - Venereal disease
 - Control of epidemic diseases
5. Child Hygiene.
 - Maternity hygiene
 - Infant hygiene "
 - Pre-school hygiene
 - School hygiene
6. Nursing.
7. Budget.

1. ADMINISTRATION AND RECORDS

ADMINISTRATION

The general administration of the department of health in a city of 50,000 population should be conducted by the health officer,* assisted by a capable secretary and one clerical assistant. In addition to purely administrative procedures, it is believed that the important functions of public health education and vital statistics should be included, the health officer being the registrar of vital statistics.

PUBLIC HEALTH EDUCATION

The dominant characteristic of the modern public health movement is its emphasis on health education. Consequently, a department of health should utilize the educational value attached to its every act and service in order to establish an individual and community consciousness in regard to health matters. The proper functioning of this service makes it desirable that the health officer be experienced in this type of work, and that his secretary be qualified to assist in carrying out the details of the following activities:

- a. Preparation of material for, and training of the staff in, making every service to individuals or groups of citizens convey a direct health message.
- b. Cooperation with the department of education in the planning of the health phase of the school program.

* A suggestion as to the distribution of his time might be as follows: supervision of departmental activities, 10 hours per week; office hours to meet public, 12 hours per week; public health education, 10 hours per week; vital statistics, 4 hours per week; investigation and development, 8 hours per week.

- c. Preparation of all departmental reports, bulletins, circulars, news stories, radio talks and exhibits.
- d. Arrangement of talks before civic organizations, and utilization of moving pictures.

VITAL STATISTICS

The registration, analysis, and interpretation of births, deaths and marriages, and communicable diseases, represent the vital bookkeeping of a community's health. They enable the health officer to balance his health books, and to determine, in a manner, the community's health assets and liabilities. They furnish him with the information which he requires to plan his work wisely and efficiently. For this reason the administration of this function should be under the local health department.

The time is still distant when the reporting of illnesses from important causes will be practiced with sufficient thoroughness to permit the health administrator to know with any degree of accuracy the real state of sickness and health of his community. But it is obvious that such information would be vastly more valuable to him in his efforts to prevent sickness and death than simply the knowledge of the existence of certain communicable diseases, and of deaths.

The importance of accurate and complete legal records of births, deaths and marriages for the individuals concerned, for the community, and for the state, is obvious. Yet in only four of the 86 cities studied by the American Child Health Association did the surveyors find the analysis, interpretation and use of these records to be thoroughly satisfactory. The standards endorsed by the Census Bureau and the encouraging progress during the past decade in the extension of the birth and death registration areas give promise for the future. That there is still need for improvement is shown by the fact that in March, 1925, only 76.1 per cent of the population of the country was included in the birth registration area, and only 88.4 per cent in the death registration area. It should be borne in mind that even in areas where the reporting of these vital data may be sufficiently complete to justify their inclusion in the official registration areas, this in no wise assures that effective analysis and intelligent use of the information is made. In order that the reasonable usefulness of this office to

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the community may be attained, and the full value of the records may be realized, the following procedures * should be carried out:

(a) *Births.* The original certificate must be scrutinized for errors or omissions and necessary corrections made by communication with the physician filing the same, or otherwise, before being copied. It must be entered in an index alphabetically by surname, with all given names; the entry should also show the sex, date of birth, and certificate number. The births should be tabulated by country of birth of the mother, and a certificate of birth registration should be made out for delivery to the parents.

(b) *Deaths.* The original certificate must be scrutinized for errors and omissions, and necessary corrections made by communication with the physician filing the same, or otherwise, before a burial permit is issued. The certificate must be copied and indexed alphabetically by surname, the entry must also show all given names, sex, age, date of death and certificate number. The death should then be tabulated

* In order to arrive at an approximate idea of the work involved in the administration of this service, the average conditions found to exist in a city of this size has been assumed on an annual basis as follows:

600 deaths
1200 births
1000 marriages

The handling of these records and the proper functioning of the office require certain items of work:

2800 copies (births, marriages and deaths) for transmission to State Registrar
1200 certificates of birth registration sent to parents
600 burial permits
1200 certified copies (birth or death certificates)
Indexing 2800 certificates
Receiving and recording 2000 communicable disease reports
Keeping of chronological charts and spot map
Answering telephone and personal calls
Verifying birth and death certificates
Tabulation of data from birth and death certificates

On a daily basis the time required for these services has been estimated as follows:

19 certificates to be copied	2 hours
9 items to be indexed	$\frac{1}{4}$ hour
7 reports of communicable disease to be received and recorded	$\frac{1}{2}$ hour
Routine procedure of chronological charts and spot map	$\frac{1}{2}$ hour
Telephone and personal calls	2 hours
• Tabulation of data from the certificates of births and deaths	$\frac{1}{2}$ hour

as to age, cause, sex, occupation, convenient residential area, nativity and, if age is less than one year, it should also be classified by age in day, week or month subdivision, and by nativity, and age of the mother. If the death is due to a communicable disease, it should be checked against the reports of that disease and entered in a spot map. All deaths of infants born locally should be checked against the index of births and the certificates to discover errors and omissions.

(c) *Marriages.* The information on the marriage license should be copied on an appropriate form for office records. All licenses should be indexed alphabetically and separately by surname of the contracting parties.

(d) *Communicable Disease Reports.* The registrar of vital statistics will also receive reports of all cases of communicable disease. The information required in these reports should be sufficient to indicate the proper departmental procedure without further investigation. It should include such items as disease, date of onset, name, address, sex, date of birth of the patient, a list of contacts, name of milk dealer, and if for a school child, the school attended. If any steps have been taken to protect the contacts these should likewise be reported. A copy of the report should be made and sent to the nurses responsible for communicable disease follow-up. The case should then be entered on a chronological chart, in the office of the health officer. For diseases which are unusually prevalent, a spot map should also be maintained.

PERSONNEL AND BUDGET

The above outline indicates the need for a trained person as health officer, assisted by a secretary-stenographer, whose time would be divided between activities concerned with general administration, education and vital statistics.

While the health officer should be the registrar of vital statistics, his secretary may well have the immediate supervision of the work and be recognized as assistant registrar. The qualifications desirable for the assistant registrar are accuracy and a sense of responsibility, an interest in the orderly presentation of data, and an appreciation of the importance of records, with a desire to make them of maximum value to the community. The nature of this position and the qualifications desired suggest the appropriateness of a woman incumbent.

One clerk typist would be needed for assistance in administrative and record work.

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With a reasonable allowance for postage, stationery, printing, traveling expenses, and so forth, the budget, therefore, for the bureau of administration and records would be as follows:

Salaries	
Health Officer	\$5,000
Secretary-Stenographer	2,000
Clerk-Typist	1,200
Maintenance, etc.	
Printing (Educational pamphlets, bulletins, reports, films, lantern-slides, exhibits)	\$1,500
Attendance at National and State Meetings (including other staff members)	500
Transportation (maintenance of H. O.'s own car)	300
Library	50
Office Supplies	150
Total	2,500
Total	\$10,700

2. INSPECTION SERVICE

ADMINISTRATIVE RESPONSIBILITY

In a city of 50,000 it is possible that the inspection service may be carried on under the direct supervision of the health officer or that he may delegate the responsibility of routine management to his assistants, in order to gain additional time for important duties that otherwise are apt to be neglected for lack of time. It is suggested that the bacteriologist in charge of the laboratory should assume direct responsibility for the daily work of the milk inspector and of the food inspector. Such contact with the problems in the field is invaluable to the bacteriologist if the most intelligent use is to be made of the laboratory. The bacteriologist, in daily reports to the health officer, should keep him informed of the field problems and defer to his decision in regard to policies.

The sanitary inspector, likewise, should report daily to the health officer's assistant, to whom all requests and complaints would naturally come. These arrangements should not mean that the inspectors are to be isolated from the constant interest and advice of their health

officer, but that a proper administrative relationship is to be established in order to promote the best interests of the department.

SANITARY INSPECTION

Sanitary inspection in the light of modern public health theory has come to be recognized as having far less health significance than it was believed to have had in the past. Among the practices of sanitary inspection which are now known to have minor or negligible health value may be mentioned,

Inspection of new plumbing installation.

Inspection of such nuisances as noise, unsightly litter of papers and rubbish, ashes, garbage, except on special complaint, keeping of domestic pets, untidy yard and cellars, vacant lots and dumps, and other conditions of physical environment, undesirable but scarcely dangerous to health.

Yet it is on such matters that the health department, because of public expectation and the force of tradition, has been compelled to expend a large proportion of the effort of its sanitary inspectors, whose services represent approximately one-sixth of the total health department budget.

There can be no doubt that these may be unaesthetic and highly undesirable, but it is contended that it is no more the function of the health department to concern itself with these matters than with the control of traffic or fire hazards. It would be more advantageous to have the control of these conditions carried out by some other department of the city government, such as the police or engineering department. There are certain conditions, however, which more directly bear upon the health of the community and may properly receive attention from the health department. Among such conditions may be mentioned,

Privy vaults and their proper maintenance.

The control of fly breeding by supervision of manure storage and removal, and of other fly breeding conditions.

Elimination and control of mosquito breeding places and the control of rat breeding.

While these problems will not necessarily be found to exist, singly or collectively, in all cities, their presence calls for aggressive efforts

which will produce measurable results. Activities should not be confined to the following up of complaints, but as far as time permits should involve constant search for conditions needing correction. Incidentally it may be mentioned that the use of a motorcycle will greatly facilitate the work. With this assistance such inspection service can largely be performed in the equivalent of one efficient inspector's time.

It is desirable that there should be a housing code and that permits should be required for lodging houses and offensive trades of various types. Records of complaints and inspections should be kept classified by street and number, and efforts should be directed toward securing voluntary compliance with orders with as few prosecutions as possible.

The work of the sanitary inspector should be concerned with far broader aspects than unsanitary conditions alone. If he is imbued with the proper health attitude and with real enthusiasm for his job, he cannot escape becoming one of the most effective health educators of the department. In his systematic house to house inspection he has an opportunity to acquire a comprehensive knowledge of all of the environmental conditions affecting the community, and a surprisingly valuable understanding of individuals and of the social problems of the community. A constant personal contact between the sanitary inspector and the public health nurse will also be found mutually advantageous, and will greatly assist the sanitary inspector in carrying out his fundamental duty of education in matters of health and sanitation.

MILK CONTROL

It would seem that there are two essential features to be considered in an adequate control of the public milk supply: first, the securing of a high grade raw product; and second, the proper handling of the same to protect the public from dangers of milk-borne diseases. The meeting of either of these requirements alone is not sufficient, for although pasteurization is the one safeguard, it is not a panacea, and it cannot make unclean milk, kept in an unhealthy environment, an ideal food for babies; nor yet will the most thorough-going inspection of the farms prevent the occasional infection of an entire supply with the germs of one of the communicable diseases. The following elements are therefore recommended, and require for satisfactory execution the full time of a trained milk inspector:

- (a) An ordinance requiring the licensing of all milk dealers and distributors within the city.
- (b) Regulations defining pasteurization and requiring the pasteurization of all milk not certified by an authorized medical milk commission.
- (c) The inspection of milk producing farms at least twice a year at milking time, recording findings on a standard score card.
- (d) The control of the pasteurization process and the handling and bottling of milk within all plants by at least semi-monthly inspection, by laboratory analyses, and by continuous temperature records by recording thermometers. The accuracy of these recording thermometers should be checked at intervals against similar instruments tested by the Bureau of Standards.
- (e) The establishment and enforcement of temperature standards for milk in transit and held for sale.
- (f) The collection of milk samples from all distributors—stores, wagons, shipping stations and plants—at frequent intervals for chemical, physical and bacteriological analysis.
- (g) The provision for medical examination of all handlers of milk to be sold raw, and all handlers of milk after its pasteurization.
- (h) The assembling of all persons engaged in the handling of milk, by the health officer, at least once a year for the purpose of giving graphic practical instruction in the importance of personal habits in the protection of milk*

CONTROL OF OTHER FOODS

The importance of properly cleaned eating and drinking utensils is unquestioned. Likewise, health as well as decency requires that the public be assured that its perishable foods, such as fruits and vegetables, meat, fish, fowl and shell foods, should be delivered to the consumer in a wholesome and edible condition. To insure prompt and adequate protection of the food supply, the following procedures are required:

- (a) An ordinance requiring that all premises where food is prepared, sold, or held previous to sale, must obtain a license before being permitted to operate, with provision that such license shall not be granted until an inspection of the premises has been made by the Department of Health and the conditions found satisfactory.

* NOTE: No mention is here made of tuberculin testing of cattle. It is believed that this is a function which is much better handled by the state through the Bureau of Animal Industry or similar division.

Regulations empowering the health officer to condemn and destroy foods considered to be unfit for human consumption.

- (b) The regular inspection and scoring of all such establishments on the basis of equipment and methods, with the publication of these scores at intervals.

For executing this program of food control the services of one inspector, who may give a portion of his time to assisting the sanitary inspector, will be required.

PERSONNEL AND BUDGET

A reasonable requirement of this inspection service would then be the following personnel and budget:

Milk Inspector	\$2,000
Food Inspector	1,800
Sanitary Inspector	1,800
Transportation * and Printing	500
Total	<hr/> \$6,100

THE LABORATORY

If the health work of the modern city is to function efficiently, if the control of the water and milk supply and communicable disease is to be based upon facts rather than personal opinion, and if the clinical service is to put into practice for its patients all of our present-day knowledge of disease prevention, there must be available a public health laboratory doing work of such high character and broad scope that all workers in this field will instinctively seek its guidance and advice. This has for some time been recognized by the larger cities and not a few valuable contributions to public health are the results of the painstaking and patient effort of the laboratory worker.

Such a laboratory will be an important factor in stimulating friendly relations between the physicians and the health department by providing an expeditious and careful diagnostic service. Furthermore, by establishing a relationship with the milk producers on a high professional plane noted for its fairness and accuracy, it will assist materially in building up the interest of the producers in the control of the milk supply.

* This covers the expense of two automobiles. No allowance is made for the original cost of the cars.

Though the laboratory is recognized as indispensable by the large cities, its benefits are no less real in the city of 50,000. When the low cost of such a service is considered it will be at once apparent that the department of health may, for a small amount, develop a strong bond between the citizenry and itself.

SCOPE

The proper scope of this work is a matter to be decided in each community. If the laboratory of the state board of health is situated in the city the local laboratory may not be needed at all or only to a limited degree. In a number of cities visited in the survey private laboratories existed doing pathological, bacteriological and chemical analyses. In some instances these were entirely private enterprises, in others they were a part of a hospital service. In planning a service under an official agency, due consideration should be given to the services being rendered by the private or hospital laboratory to secure a complete covering of the field without duplication. There are, to be sure, certain items of service which are concerned more with the health of the individual than with the public. The plan of rendering these services for a definite fee is not incompatible with the policies adopted in some other branches of health administration. Cities are providing hospital beds for tuberculosis and communicable diseases and collecting a reasonable fee from those who are able to pay. It becomes then a matter of making the necessary laboratory service available, either under an official or private agency or both, and of rendering those services free which are essential to the protection of the public health and welfare, and possibly making a charge for other services.

The bacteriologist-chemist should be a person well trained in modern methods of disease diagnosis, and milk and water analysis, and should be assisted by a part-time helper.

The laboratory should be prepared to render the following services:

I. Examination of:

1. Cultures for diagnosis, release and for carriers of diphtheria
2. Specimens for determination of open or infectious cases of tuberculosis
3. Widal agglutination, blood cultures, stool and urine specimens for typhoid and para-typhoid
4. Smears for gonococci

5. Smears for *Triponema pallidum*
6. Blood for *Plasmodium* of malaria
7. Urinalysis for health department clinic (not routine for all physicians)
8. Physical, bacteriological and chemical analyses of milk and ice cream
9. Bacteriological and chemical analyses of water from both public and private sources
10. Intestinal parasites, in certain instances
11. Specimens for pneumococcus typing and for meningococcus examination in special cases.

In certain local situations it may seem wise to examine blood specimens by the Wassermann reaction in the local laboratory but the variety of special apparatus and reagents required is so large and the time consumed in making one examination so nearly that of making twenty, that it is only advisable when there are a great many blood specimens to be examined. If this work is to be undertaken, provision should be made for additional staff and maintenance. The local laboratory should, if the samples are to be sent elsewhere, be prepared to take the blood specimens and separate the serum.

II. Keeping in stock the following biological products freely available to physicians and for distribution by the division of communicable diseases:

1. Diphtheria anti-toxin and toxin-antitoxin doses
2. Typhoid and para-typhoid vaccines
3. Smallpox vaccine
4. Anti-tetanic serum
5. Standardized material for Schick testing.

III. Preparation and free distribution of containers and materials for specimens and cultures.

IV. Encouragement of research problems outside of routine work.

V. Provision for the receipt and incubation of diphtheria cultures submitted after laboratory hours.

The service which we may expect from a well-organized laboratory is about 125 examinations of specimens of all kinds per 1,000 population annually, at a cost per specimen of about 40 cents.

PERSONNEL AND BUDGET

The staff and budget should be approximately, as follows:

One bacteriologist-chemist	\$2,200.
One helper (part-time)	600.
Maintenance and supplies	1,000.
	<hr/>
	\$3,800.

4. COMMUNICABLE DISEASE CONTROL

ENFORCEMENT OF SANITARY CODE

The sanitary code of the local ordinances should provide regulations for the control of communicable disease. It is advisable to give broad discretionary power to the health officer in the interpretation and enforcement of these regulations. Isolation cannot be effectually maintained under many of the housing conditions which are found in cities, or with individuals who cannot be made to appreciate the importance of the measure or who refuse to obey. The necessity of hospitalization as the alternative should be taught the community and should be made compulsory when, in the judgment of the health officer, effective isolation cannot be maintained on the premises. Furthermore, certain diseases as smallpox and laryngeal diphtheria requiring intubation can be safely cared for only in a hospital.

CONTROL OF EPIDEMIC DISEASES

In the plan of organization of the health department for a city of 50,000, it is not believed that the full-time service of a physician will be required in the control of communicable disease. Provision has already been made for the receiving of case reports and proper recording by the assistant registrar of vital statistics and it is recommended that the health officer direct and supervise the epidemiological studies. The nurses assigned to communicable disease control will, with careful teaching, soon be capable of conducting the routine field investigation, and be able to place the facts before the health officer for analysis and correlation. This work, together with the details of analysis of vital statistics, which the health officer will also carry on in collaboration with the assistant registrar, will furnish him first hand knowledge most valuable in his public relations.

The consultant diagnostic work of the department calls for highly technical service from a physician, and we believe that the school physician, who is incidentally exercising this function in his examinations, is best fitted to assume this responsibility. It should be the function of this service to furnish the private physicians of the community expert advice and consultations on communicable diseases, relieving the family physician of the responsibility of making diagnoses in those cases where reasonable doubt may exist. It is true that such a service may occasionally be used somewhat freely by the private physician who wishes to evade the unpleasant consequences of making a diagnosis unwelcome to the family, but such abuse is not likely to be a serious matter. Effective service of this character should develop a strong bond between the local physician and the health department.

Excluding tuberculosis and venereal diseases, which will be considered separately, the number of cases of disease reported will rarely exceed 1,200, and the probable number of calls for diagnostic service will, doubtless, be within a hundred. On such a basis this service, requiring one to three hours per week of the school physician, will not impose too great a burden and will keep him in touch with the private practitioner as well as indicate the type of infection locally present.

Nursing Supervision—It is proposed later in this section of the report to discuss the administration of the nursing service. In the following sections, however, when discussing those health activities which require the services of the nurse, the necessary amount of time needed will be indicated, on the basis of an assumption of the size of the problem to be met and the amount of work an average nurse can satisfactorily perform.

It may be assumed, as above, that normally the number of communicable diseases reported to the health department, exclusive of tuberculosis and venereal, will not exceed 1,200 annually. It is contemplated that a nurse will visit all cases reported. On the first visit, provisions of the sanitary code as to placarding, protection of contacts, and hospitalization will be executed. The case history with all details necessary for proper epidemiological study will be written up at this time.

Important as these items of service may seem, they are but the routine formalities of the nurse's work. Her real worth and service depend upon her presentation to each household of a clear and

detailed plan of nursing care of the patient for safety to himself and to the public at large; the justification for, and reasonableness of, all restrictive measures; and detailed and practicable advice on the organization of the household in isolation. The nurse must be prepared to demonstrate and to teach the technique of home care of communicable disease. In cities with large foreign-born populations it may be desirable to have the basic information for this service printed in several languages, to be given the mother or caretaker for reference after the nurse has left, but it should not be permitted to supplant the sympathetic, painstaking instruction which only the highest type of public health nurse can give. Such printed directions can often be obtained from the state department of health.

The number of nursing visits necessary for this care and instruction will differ in different diseases and in different families. If measles and whooping cough are included, the number of visits for all diseases will probably average three per case. The 1,200 cases will then receive 3,600 visits. According to the standard explained in detail in the nursing section of this plan, the average number of nursing visits in the 250 working days of 8 hours each amounts to 2,000. It would then require the full time of one and four-fifths nurses to perform the 3,600 visits. The balance of the second nurse's time could be wisely employed in the immunization clinic described below and among older institutional children or special groups. In cities without adequate transportation facilities, or with large areas, it would be necessary and a real economy to provide automobile transportation for the communicable disease nursing work, unless it were done by all nurses as a part of a plan of generalized nursing.

Serums and Vaccines—The prompt and effective use of serums and vaccines for prophylactic and therapeutic purposes is a procedure which must be a serious concern of the health department. It is not sufficient that the health department laboratory should provide these products free of charge upon request, or that the health department merely record on the report of communicable disease made by the family physician, the name of contacts and whatever protective actions have been taken. The health department should encourage the family physician in every possible way in the prompt therapeutic use of diphtheria antitoxin, and immunization of contacts in cases of diphtheria, typhoid fever and smallpox. This may call for repeated visits and the most patient persuasion, but the educational results will repay the effort.

Immunization Clinics—With the scientific proof of the practicability of the protection of communities by active immunization against diphtheria, smallpox, and typhoid fever, it has increasingly become one of the major responsibilities of the department of health to promote this immunization by active and aggressive measures. This protection, so far as is possible, should be done by private physicians who should report such immunizations to the health department. In order to secure this protection, three lines of attack should be followed: first, the education of the community, both laymen and the medical profession, by all practicable means in regard to the value of widespread protection; second, the establishment by the health department of immunization clinics for special groups, such as the pre-school and school child, including children in institutions; and third, the promotion of immunization work on the part of the large industrial and commercial organizations at their own expense.

If the health department concentrates its activities upon one of the early age groups and, through cooperation with the private physicians and through its own clinics, secures the immunization annually of a number of children equivalent to the number of births, it will be a matter of but a few years before the percentage of the child population protected will be so large as to make impossible such epidemics as are now allowed to occur. Accordingly, the number of cases of these diseases will be reduced to a point where they become a rarity. Active measures of this nature are among the best indices of a progressive and effective health department. Once organized, the routine immunization of the new crop of susceptibles will be considered no more of a task than are several of the other recognized duties to every child. It will be put in the same category as the prophylactic treatment of babies' eyes with silver nitrate solution, the delivery of certificates of birth registration, and thorough examinations preliminary to school entrance.

If each year 500 children were immunized against diphtheria and smallpox at the health department clinic it would require an average of 1 two-hour clinic a week, and the nursing time required would be only 104 hours, or .05 of a nurse's 2,000 yearly hours of service. The work should be so organized as to come at times of minimum pressure of other work. The summer months are ideal for such work among the pre-school children, and other times for institutional work.

Hospitalization—Provision should also be made for hospitalization expenses to the extent of approximately \$5,000, on the assumption that an average of not more than five beds will be occupied by individuals who can not afford to pay \$20 a bed per week. While the city should, for its own welfare, hospitalize at its expense all patients needing this care for the public good, every effort should be made to encourage the family to meet this responsibility directly or through sickness insurance.

TUBERCULOSIS

The present day armament against tuberculosis demands a large variety of weapons. It requires a frank, reasonable and cooperative attitude of mind on the part of the community and especially on the part of the patients, and their physicians. It requires on the part of the physicians the faithful performance of the irksome duty of reporting cases of the disease as early as possible to the department of health. It necessitates the development of consultation clinics where careful physical examinations may be made and diagnosis established. It calls for a public health nursing staff which will study home conditions of patients and interpret and adapt the physician's orders to the conditions in the home, assist in the hospitalization of patients, control contacts, and perform many other services. It expects the community to share in the cost of erection and maintenance of a sanatorium for the proper care and instruction of its patients. It must see that necessary laws are passed to protect its citizens from infected milk and food supplies, and from other menaces. It should encourage the private agency to help in those directions in which it is best fitted to serve. And lastly it must see that the public is educated to appreciate the importance of a healthy, normal way of living, of bringing up children with healthful habits, of living in the open, of playing in the sunshine, and of giving the handicapped child a chance to catch up with his playmates.

What such a program as the above requires of a city of 50,000 population in service, personnel, organization and expenditure will be described in the following pages.

Reporting of Tuberculosis—It is probable that there are in the average community about nine active cases of tuberculosis for every annual death. It is true that many of these are unrecognized and many more are unreported. As the effectiveness of measures against

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tuberculosis depends upon the early recognition and prompt reporting of the disease it is most important that every effort be made to bring the proportion of reported cases up to the above standard. The failure to report tuberculosis is strikingly shown in the 86 smaller cities, only 67 of which could supply information on this subject. In these cities in 1923 but 1.6 cases were reported for every death. In 27 cities the records show more deaths than cases. It is probable, moreover, that the majority of these cases were reported in the advanced stages of the disease, or just previous to death.

The Estimated Problem—What is the nature and extent of the tuberculosis problem in the average city of 50,000 inhabitants? No statement based upon averages can be expected to fit exactly the conditions found in any particular city. Such a statement may, however, fairly approximate the conditions in at least a majority of such communities. If it be assumed, then, in a city of 50,000 that the death rate from tuberculosis of all forms is 100 per 100,000 population,* or actually 50 deaths annually, the number of active cases in the community may be estimated at 450, using the ratio of 9 cases per death. It is perhaps reasonable to assume that there are for every active case 3 family contacts and one arrested case. This would mean that there were potentially the following number of individuals indicated in the table below of whom the tuberculosis service should be aware and to whom, in varying degrees, it should extend its educational, social, nursing, and medical services. However, in practice it is well known that the tuberculosis problem as actually recognized is a different matter, as is indicated in the table below. The first column represents the known cases on the assumption that 3 cases are known to exist for every annual death (a ratio exceeded in 17 of the 86 cities), the second column on the basis of 9 cases per death, which is more probably the true situation.

	Actually reported	Estimated to exist
Active cases	150	450
Old, arrested or passive cases	150	450
Individuals exposed to close contact with active cases	450	1,350
Total	750	2,250

*Mortality statistics 1921, U. S. Bureau of the Census, for 79 of the 86 cities gives an average tuberculosis death rate, all forms, of 93.15 per 100,000.

Clinics—What is the need for a tuberculosis clinic in a city of 50,000? The fact that 71 of the 86 cities have developed clinic services might be considered an answer to the question. But it would be profitable, perhaps, to outline what the effective use of a tuberculosis clinic in such a city would be. If we assume that the total number of active cases is about 450, of which only 150 are known to the health agencies, and further assume that half of these are bedridden or under the care of private physicians or nurses, there will remain 75 patients eligible for clinic attendance. On this basis the following use of the clinic is suggested:

75 individuals averaging 6 visits	450 visits
450 contacts of 150 cases ($1\frac{1}{2}$ visiting clinic twice)	450 "
200 individuals (non-tuberculous) examined at clinic	450 "
Total of 500 individuals making	1,350 "

These 1,350 visits are equivalent to 26 examinations a week. In other words, if energetically organized and conducted, there would be no lack of work for 2 two-hour clinics a week. This would be equivalent to 208 hours and require one-tenth of the time of a nurse. The desirability of one of these clinics being held in the evening or late afternoon would probably be indicated in many communities.

Nursing Visits—Many factors enter into any estimate of the number of visits that a nursing staff should endeavor to make in connection with its tuberculosis service. A few of these factors would be,—the number of cases reported annually, which unfortunately seldom exceeds 3 times the number of annual deaths unless special efforts have been made; the economic status of the community, which may increase or decrease the necessity of frequent visiting; the community's provision for, and the public's attitude toward, clinic and sanatorium facilities; and, of course, the size of the nursing staff. It is, nevertheless, advantageous to consider what a reasonable nursing service should be in such a community as is under discussion.

The responsibility for all field work in connection with tuberculosis would fall upon the nurse. This means that as a definite part of her daily work the nurse would investigate all reported cases and their immediate family contacts, encourage continued medical super-

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vision at the hands of a private physician or the clinic physician, and supply adequate nursing and social care for the patient, and, so far as is necessary, for the contacts.

What is the minimum number of visits such a situation would require? The following table suggests a basis for estimating this:

150 active cases receiving	6 visits	900
150 arrested cases receiving	1 visit	150
150 contact families receiving	2 visits	300
Miscellaneous visits*		450
Total		1,800

It is again emphasized that the above estimate of the demands upon a tuberculosis nursing service are based upon a number of deliberate assumptions and represent only a moderately thorough service for less than one-half, or possibly one-third, of those existing, though unrecognized, tuberculosis cases in an average city of 50,000. When expressed in terms of the visits per 50,000 population, the 1,800 visits called for are exceeded in 13 of the 60 cities reporting the number of home visits, and very nearly attained by 5 other cities. Ten cities reported between 100 and 1,500, and 28 cities reported less than 1,000 visits.

The 1,800 visits a year represent 35 visits a week devoted specifically to tuberculosis. They would necessitate nine-tenths of the time of one nurse, assuming the average number of nursing visits a day to be 8, and the number a year to be 2,000.

Personnel—It is assumed that the best available diagnostician of tuberculosis in the community can be prevailed upon to conduct 2 two-hour clinics a week at a remuneration of \$10.00 a clinic, or \$1,000 a year. The clinic and nursing services as outlined would require the entire time of one nurse.

Hospitalization—The sanatorium and hospital facilities for the care of tuberculosis cases is essential. Whether sanatorium beds are provided by the city, county or state, the standard recommended by the National Tuberculosis Association calls for about one bed for every annual death, or some 50 beds for a city of 50,000.

*.Miscellaneous visits include visits to suspected cases, investigations of deaths, employment calls, cooperative visits, welfare calls, visits to tuberculosis hospitals, visits to doctors' offices, collection of sputum specimens, etc.

As the average duration of a patient's stay in a sanatorium is about 4 months, this would permit of 150 patients receiving sanatorium care if the beds were used to maximum capacity. It is more in accord with the facts to assume a 75 per cent utilization, or 112 patients per 50,000.

The actual practice in the 67 cities in which data could be obtained reveals that the average number of individuals known to have received hospital or sanatorium care in 1923 was 53 per 50,000 population, although 12 cities had over 75 patients and 4 cities over 112 patients. Since tuberculosis hospitalization is so frequently a county or state concern, no special provision is made for it in the budget.

Legislative Measures—In order that tuberculosis may be effectively attacked, certain provisions must be given the sanction of law and the respect upon which depends their enforcement. These are: the prompt reporting of cases of the disease; the concurrent disinfection and disposal of sputum, and terminal disinfection involving cleaning or renovation of the premises after the removal or death of a patient; an anti-spitting ordinance; the segregation of careless tuberculous patients, and, finally, regulations regarding tuberculin-testing of dairy cows, pasteurization of milk, and other procedures which will protect the milk supply.

Private Agencies—At the present time and undoubtedly for some time to come, a considerable portion of the efforts directed against tuberculosis will be found to be expended by private agencies. It was indeed the private agency that led in the promotion of the anti-tuberculosis movement, and it is only during recent years that health departments have begun to assume at all energetically the direction of this, perhaps, their largest single problem of disease prevention.

The private agency interested in tuberculosis may be a local or a county tuberculosis society. It may be the Visiting Nurses Association. Occasionally it is an Employer's Tuberculosis Relief Association, or a part of a local public health association. Local conditions will determine what its activities would most profitably be.

While a private agency will always plan for the eventual adoption of its tuberculosis work by the official health department, there will remain, after the major part of the tuberculosis program is taken

over, a number of distinctive contributions which a private organization may continue to make. These are:

(1) The maintenance of public interest and financial support of the tuberculosis movement through the conduct of Tuberculosis Christmas sales.

(2) The support and even temporary management of special activities directed against tuberculosis, such as nutrition classes, mid-session school lunches, open air rooms, periodic weighing of school children, playground facilities, vacation camps, activities designed to promote health habits in children and the rehabilitation of post-sanatorium patients.

VENEREAL DISEASES

The health department should take an active part in the guidance of the campaign against venereal disease, in cooperation with the state department of health and the medical society. The program for control of venereal disease should include in its activities educational measures, recreational measures, protective social measures, law enforcement measures, and medical measures.

Reporting—It must be frankly admitted that the present state of reporting is very poor. It has been observed by some investigators that not more than one-half of the new cases receive medical attention and that only about one-half of these cases are reported by doctors. If this be so, not more than one-fourth of the new cases get into the statistical records at the present time.

The size of the venereal disease problem in any community is a baffling one to determine. Estimates vary widely in a given community, while the differences which must be recognized to exist in different types of cities are, of course, great. As an arbitrary figure 2 per cent of the population would seem to be a conservative estimate of the number needing medical treatment at any given time.

Clinics—Needless to say only a portion of these cases should be eligible for treatment at a public clinic. If 25 per cent of the 1,000 estimated to need treatment in a city of 50,000 attended the clinic the number would be 250. The number of clinic visits these patients would make is again a pure conjecture for the widest extremes are found in this respect. Some clinics advise daily visits, other weekly. The treatments for syphilis and gonorrhea are markedly different in

regard to frequency and continuance. The conscientious patient with regular treatments must be offset by the indifferent patient with infrequent visits or complete failure to return. Consequently any figure that is accepted as representing the average number of clinic visits per patient is only an estimate. If a conservative estimate of 8 visits per patient is adopted, the number of clinic visits for the 250 patients would be 2,000 a year. On such a basis a treatment clinic, operated by a paid staff, consisting of a part-time physician, assisted by a nurse giving one-tenth of her time, with a male nurse-attendant for evening clinics, should be provided to hold weekly, one afternoon and one evening session of two hours each. At each of the 104 clinics held in the course of the year, some 20 patients undoubtedly could be treated.

Nursing Visits—In venereal disease infection, quite as much as in other types of communicable disease, the importance of interpreting and adapting the doctor's advice to conditions in the home, is obvious if effective preventive work is to be done. This is particularly important in families in which one of the members is infected. If one-half of the cases under treatment are of this character, and 3 visits are made by the nurse, 375 visits would be required, or one-fifth of the time of a nurse. A considerable portion of this nurse's time is deliberately left unassigned, allowing, by this means, for further development and providing a certain reserve for sickness substitution, or other emergency. Refractory cases refusing treatment probably should be handled by the health officer and his sanitary inspector, with the cooperation of the police department.

Continuous Treatment Needed—Provision should also be made for the examination of presumably infected persons and for the return, either to a public clinic or to private physicians for completion of treatment, of any cases that have been reported by physicians as having discontinued treatment before being rendered non-infectious. In some instances this will require suitable quarters for segregation of patients.

Laboratory and Educational Aids—Free public health laboratory service should be provided for the examination of specimens submitted by clinic, hospital and private physicians. The educational program should be sufficiently broad in its scope to deal not only with the dangers of venereal diseases, and the importance of early

and thorough treatment, but also with constructive ideals and recreational measures.

SUMMARY

To summarize the needs of the Communicable Disease Control Service it would seem that the following personnel (exclusive of nursing and hospitalization) is necessary for most effective work:

1 physician, part-time, to aid health officer in consultation work, diagnostic service in doubtful cases, etc. (major portion of his time as school physician)	\$ 500
1 physician, part-time for tuberculosis	1,000
1 physician, part-time for venereal disease	1,000
1 male attendant for venereal disease clinic	250
Maintenance and supplies (including T.B. & V.D. Clinics)	2,600
Transportation	400
	<hr/>
	\$5,750

5. CHILD HYGIENE

Activities in the field of child hygiene have already achieved remarkable results, but in many localities should be extended along lines of sound administrative procedure for the welfare of mothers and of future generations. An adequate program for the protection of mothers and children reaches from care during pregnancy, at time of delivery and during convalescence, through infancy, pre-school and school life. It obviously calls for knowledge of a considerable number of prospective mothers as early in pregnancy as is possible and the prompt reporting of all births and still-births.

MATERNITY HYGIENE

Clinics—Of fundamental importance is the organization of prenatal clinics for the regular medical examination and hygienic advice of expectant mothers who will not normally employ a private physician early in the course of pregnancy. The number of such clinics, and their location will depend largely upon the type of community. On the assumption that 1,200 births will occur annually in a city of 50,000 and assuming that 15 per cent of the pregnant women will be registered at the clinic, there would be 180 registrants. If these visit the clinic monthly during the last five months of pregnancy, and make

one post-natal visit, the total of six visits for the 180 patients would amount to 1,080 visits. Many of these visits would be very brief; however, several would come to each clinic for a thorough time-consuming examination, so that 10 per clinic would approximate the number advised. Consequently, a weekly two-hour clinic (104 clinic hours in a year) should meet the needs as outlined.

The clinic should be located within easy reach of the people it aims to serve, and may, therefore, call for two or more clinic centers with sessions on alternate weeks. To hold the clinic, an obstetrician should be engaged and fairly remunerated. A physician and nurse should always be in attendance at the clinic, while nursing follow-up in the home is also essential. Arrangements should be made, either with the existing dental clinic or with local dentists, whereby the patients can secure the necessary dental care with the least inconvenience.

Nursing Service.—The nursing service in connection with the clinic would require only a small fraction (104 hours) of the nurse's time. The home nursing service, however, would consume the balance of the nurse's time if it is assumed that 25 per cent of the pregnant women receive home visits averaging six in number. The six visits to the 300 patients would require 1,800 visits per year or nine-tenths of a nurse's time. One nurse, then, could adequately care for this pre-natal nursing service and the clinic service.

Care at Time of Delivery.—Emphasis should be given to the importance of provision for obstetrical care for a certain proportion of the deliveries either through adequate hospitalization or through outpatient obstetrical medical and nursing service. There is urgent need for improvement in technique at time of delivery comparable with recent advances in pre-natal and post-natal care. The time has come when we may expect from 25 to 40 per cent of births delivered in hospitals, and a few cities already have even more than this. The obstetrical work of some of the nursing organizations, in families where home deliveries occur, has proved of incalculable value, and there is much still to be learned of the ultimate practical advantages of delivery in the home as compared with hospitalization. Although it may be said in general that deliveries by midwives have decreased somewhat in recent years, it must be recognized that a fairly large percentage of babies (for the 38 cities reporting the per cent varies from 3 to 52, averaging 17 per cent) are still delivered

by them. It is therefore essential that this service be safeguarded as fully as possible through the licensing and supervision of midwives, a matter to which the health officer and his director of nursing should give their attention. Provision should also be made for free distribution and routine administration of silver nitrate to the eyes of the new-born infant.

The amount of nursing care at the time of delivery that an average community should need may be estimated after deducting the number of deliveries that occur in hospitals, the number attended by midwives, and the number with private nursing care at home. The number of deliveries occurring in hospitals and the number attended by midwives varies from 8 to 78 per cent of the total births, the average of the 32 cities reporting being 48 per cent. If one-half the remaining number are considered to be without nursing care other than that offered by the public health nurse, it would appear that about 300 should be provided for. As the average duration of the nurse's visit at a delivery is 5 hours, the total time required for the 300 deliveries would be 1,500 hours, or the time of 1 nurse, with one-fourth of her time unassigned. The nature of a delivery service is such, however, that the entire time of a nurse would be engaged in meeting the above demands. It is possible, nevertheless, that some part of this nurse's time might be devoted to midwife supervision.

Post-natal Care—The care of the mother and her baby after birth should naturally follow upon the medical and nursing care received at the time of delivery. Not only should the 300 deliveries receive post-partum home nursing care but the mother should be urged to return to the clinic for post-partum examination and advice. From the standpoint of the best nursing standards as advocated by the Maternity Center Association of New York, each case should receive at least 5 daily visits and approximately 5 visits within the following 6 weeks. If this standard were only partially met, say 7 visits per case, this would mean a total of 2,100 visits to the 300 cases, which would represent the full time of a nurse.

Personnel—To summarize the personnel requirements of the maternity service:

- 1 Obstetrician for Clinic
- 1 Nurse for 300 Pre-natal cases (and clinic)
- 1 Nurse for 300 Delivery cases and midwife supervision
- 1 Nurse for 300 Post-partum cases

INFANT HYGIENE

The problem of health service for the child after birth divides itself naturally into three phases: infant, pre-school and school hygiene.

Clinics—A broad program of infant care embodies a system of infant welfare clinics for the regular medical examination and hygienic supervision of infants and young children. These clinics may be located in a health center building, in school buildings or in settlement houses, for example, but as in the case of pre-natal clinics, should be so situated that they will be accessible to the families needing this service.

Nursing Visits—Visits to the clinic should be followed by home visitations by nurses to see that instructions are understood by the mother and are actually carried out under home conditions. There are always, too, a certain number of babies who for one reason or another do not come to clinic but need special attention which may be given by the nurse in her home visits, and by the pediatrician in emergency cases.

Educational Efforts—Coupled with these organized efforts for medical and nursing care should be a concerted attempt for education in matters of personal hygiene, with special emphasis on infant hygiene. This may include special courses for the girls in the higher grades of school, organization of Little Mother's Leagues, and other similar activities, in addition to special conferences designed primarily for mothers and expectant mothers for discussion of problems of nutrition, dental hygiene, and allied topics.

Limitation of Service—The extent of the infant welfare service must again be estimated on the basis of certain deliberate assumptions. In the average city of 50,000 there will be about 2,250 children under 2 years of age. The average enrollment of the infants under 1 year of age at the clinics in the 48 cities reporting this fact was about 30 per cent, the average for the upper third being 55 per cent. If we assume 30 per cent as a figure for the children under two there would be 675 infants enrolled. Allowing 10 visits a year to the clinic, the total number of visits would be 6,750. An average clinic attendance of 30 infants, 10 of whom would be seen by the doctor

would necessitate 227 clinic sessions of about 2 hours, or about 4 clinics a week. These 454 clinic hours with additional time before and after the clinic for record-keeping and the like, would require between one-quarter and one-half of the time of a nurse. It is taken for granted that the nurse in attendance will be assisted by 1 or 2 well trained volunteer helpers.

The extent of home visiting which the children of this age group should receive is a still more controversial question. Where shall the line be drawn? How many visits to how many children should constitute the minimum requirement of the average city of 50,000 population? To illustrate one extreme, suppose *every* child received a monthly visit. Such a program would necessitate 25,800 visits or the full time of 13 nurses. No such chimerical suggestion would recommend itself to anyone. The following assumptions, calling for 6,075 visits or the time of 3 nurses, are made. It is suggested that every new-born child be visited once. This would require 1,200 visits. If one-half of the infants under 1 year of age (550) receive in addition, on an average, 7 visits a year, and if one-half of the 1,050 children between 1 and 2 years of age receive 4 visits a year, on an average, the total of 7,150 visits would be required. This is not beyond the practice obtaining in numerous cities of this size. Sixteen of the 86 cities average better than the standard proposed for the infants under 1 year of age.

Personnel—The total personnel needed for the infant welfare service would then be as follows:

1 or 2 part-time physicians
4 nurses for clinic and home nursing
Trained volunteer helpers

HYGIENE OF THE PRE-SCHOOL CHILD

J It is likewise desirable, in the case of the child from two to six years of age, to consider the public health problem which he presents.

Need—It has come to be recognized that the child should not be dropped from sight or attention as soon as he passes his second birthday. In the four year interim between his supervision as an infant and his entrance to school, during which he is likely to find himself ousted from the limelight of attention by a new arrival in

the family, he is either growing normally in wisdom and stature or he is developing a multitude of defects, related either to the eyes, ears, nose, mouth, teeth, bones, speech, intelligence or nutrition. Unless this is detected and corrected he will begin his school career a handicapped child. Consequently, not only clinics which give special attention to this child's perfection or deficiency of growth, and to questions of nutrition, habits and behavior, but also home supervision by nurses and specialized workers should be provided for those who could not and in some instances would not avail themselves of the advice of a private physician.

Among the 4,400 children of this age group in a city of 50,000 it must be assumed that a goodly proportion will be under the care of private physicians and that many parents cannot be persuaded that the health of this apparently healthy child is a matter of concern.

Limitation of Service—We must assume that the pre-school clinic will be limited, except in the unusual city, to a relatively small proportion of the children and that the health officer will use it primarily as a demonstration to the private physicians, and the parents, of the importance of their providing proper medical supervision.

Clinics—If, therefore, the clinic reaches only 1 in 10 of these children, each coming 5 times to the clinic (a diphtheria immunization and subsequent Schick test requires 5 visits) the total number of clinic visits would be 2,200. Allowing 10 examinations in 2 hours, with 10 additional brief services, such as an inoculation, there would be 20 patients a clinic, or 110 two-hour clinics, an average of 2 a week. This would mean 220 clinic hours and would require the part-time service of a physician and one-tenth of the time of a nurse, assisted by a well trained volunteer worker.

Nurses' Visits—The nurses' visit to the homes of pre-school children should attempt no doubt to cover a larger number than that in the above calculation, the purpose being not only to urge the parent to have the child examined by the private physicians interested in health but to interpret the doctor's advice in relation to family and home conditions and to teach the mother. If 25 per cent of the 4,400 children were seen 3 times a year the number of nursing visits would be 3,300 or a little more than the work of 1 and three-fifths nurses. The balance of the second nurse's time could be wisely employed in

connection with the immunization of pre-school children in institutions and day nurseries.

Personnel—To summarize the personnel requirements of the pre-school service:

- 1 physician
- 2 nurses for clinic and home visiting
- 1 or 2 volunteer workers.

HYGIENE OF THE SCHOOL CHILD

Purposes—The primary purposes of school health supervision are five-fold. In order of their historic development they are: (a) to protect the community from the spread of communicable disease; (b) to insure sanitary conditions at the school plant; (c) to discover early and to correct physical and mental defects; (d) to provide systematic physical education; and (e) to educate the child in the principles of healthy living. Broadly speaking, for economy of service and simplicity of organization, supervision should be exercised through one administrative department. Whether this be the health department or the department of education is of less importance than the assurance that the work is done effectively.

Communicable Disease Control—A complete system of school health supervision calls first of all for the daily inspection of children for discovery of evidence of communicable disease or obvious physical handicap. Suspected cases may be discovered by the teacher, or by the nurse through rapid classroom inspections, and referred directly to a physician. All children reported by the teacher, the parent or the attendance officer, as having been absent more than two or three days on account of illness should be visited by the school nurse, and a certificate, signed by the medical inspector, board of health, or nurse, should be required before re-admission.

Sanitation of School Buildings—Attention should be given to the sanitation and hygiene of school buildings, grounds and equipment. Measures for proper lighting, heating and ventilation should be enforced and the temperature of the schoolroom maintained between 65 and 68 degrees Fahrenheit. Consideration should be given to room cleanliness, seating of pupils, care of outer clothing, care of the water supply and provision for adequate toilet and washroom facilities.

Physical Examinations—One of the most important functions of school health supervision is the physical examination of children for the discovery of physical defects. These examinations should be made by physicians assisted by nurses. It is believed that for a complete, thorough physical examination by a physician, including heart and lungs, at least fifteen minutes will be required.*

This examination is primarily an educational experience for parent, teacher, nurse and child. It is desirable that the parents be present, and this will usually provide the first opportunity for the parent to understand the nature and significance of a health examination as conducted by an interested and well-trained pediatricist. It should reveal the physician to the child in the new rôle of an understanding friend, and the child to the physician as a distinctive personality requiring his best wisdom and understanding to comprehend and advise. Teacher and nurse should add their knowledge of the child, and in turn profit by the physician's advice regarding the child. In fact, if this examination is to have the far-reaching and lasting effects which are intended and the common understanding of parent, child, nurse, teacher, physician is to be attained, the following relations and attitudes must be assumed:

(a) An understanding, sympathetic attitude on the part of the EXAMINING PHYSICIAN, as a medical advisor and educator, having in mind the child from all angles of its development, mental and physical, its habits, and its reaction to its environment.

(b) The development of an attitude of friendliness and confidence toward the physician on the part of the CHILD, obtained through the physician's tactful approach, understanding of child psychology and real interest in the individual child.

(c) The imparting by a PARENT to the physician of the intimate personal information regarding the child's condition and habits, such

* It appears from the analysis of the school medical inspection in the 86 cities from 40,000 to 70,000 that the practice which is almost universal is a rapid physical examination conducted by the physician for the purpose of detecting physical defects. The average rate of examination based upon 62 cities where such information was obtainable was 18 an hour with a maximum of 90 and a minimum of 2. In only 9 of the cities was it the regular practice to remove the clothing to the waist. In but 14 instances was a definite effort made to have the parents present at the physical examination. However, one city reported 95 per cent of the parents to be present and another about 50 per cent. Assuming this picture to be representative, it is evident that the result is the detection of only the most apparent physical defects. While recognizing that even so coarse a method of screening is not without some value, the development of the thorough health examination with educational emphasis has revealed the limitation and inadequacy of the screening method as the only routine medical service.

as is essential before the physician can understand the home environment of the child and give individualized advice.

(d) The detailed explanation to the parent, teacher, nurse, and child of the INDIVIDUALIZED ADVICE regarding the child's condition and habits.

(e) In so far as administratively practicable, the TEACHER should be present at the examination to add still greater significance to it, to help interpret the child to the physician and to benefit by the first hand advice of the physician regarding the child.

(f) The NURSE in addition to arranging for these examinations under the physician's direction should invariably be present (1) to help interpret the home environment to him, (2) to gain first hand knowledge of the doctor's findings and advice in order to do more intelligent teaching in the home, (3) to conduct certain phases of the examination, (4) to assist child, mother, and doctor to share with the teacher the responsibility for the record of the doctor's findings and advice.

If a more rapid examination is desired at this time, it would seem advisable to enlist more fully the services of teachers for the preliminary routine physical examinations, according to the plans developed in Detroit, and in the State of Virginia. By this plan, the school medical inspector would be called upon to check the results of examination of pupils referred to him as having possible defects. Although teachers obviously cannot examine for heart and lung affections, they should after proper instruction be capable of grading roughly thyroid, vision, hearing, mouth-breathing, tonsils, skin, anemia, teeth, palate, cervical glands and orthopedic defects.

Records—Careful records concerning each child's physical condition, including the results of examinations and corrections made should be kept on file in the school office. It should be emphasized that a uniform terminology for defects and a standardized method for checking and recording corrections should be employed.*

The thorough health examination by its very nature is time-consuming, and practical consideration would limit its frequency to twice or three times during the school career, preferably as early as possible. In the case where intensive pre-school work has occurred

* It would be well for cities to keep in touch with a committee of the American Public Health Association which is endeavoring to promote uniform standards in this work. Dr. Merrill Champion, State Board of Health, Boston, Massachusetts, is the present (1925) chairman of this committee.

and the children enter school unusually free from physical defects it may be preferable to postpone the examination until the second or third year.

Clinics and Health Classes—Where no other community facilities exist, school clinics should be maintained for the correction of defects which would not otherwise be remedied. Dental clinics are particularly important and provision is made for them in the budget. Attention should be given to special classes for handicapped children particularly for visual and mental defectives and for children suffering from failure posture and undernourishment. Another feature of value is the organization of special classes in industrial arts, cooking, home economics, and home nursing, which have so definite a bearing on the preparation for intelligent home making.

Consideration should be given to the hygienic arrangement of the daily program to provide for a suitable alternation of study with manual work or play, of small muscle movements with large, of activity with rest, of indoor with outdoor activities.

Physical Education—Systematic physical education is regarded as a health-promoting activity and should be included in a balanced program of health supervision under a qualified physical director. Each boy and girl should have normal physical activity sufficient in amount for growth and development, and in kind, appropriate to age, ability and sex. The course of instruction should give recognition to the mental and physiological age of the pupils and to native tendencies that appear in the well-defined growth periods of childhood.*

Health Education—Health training and instruction should be developed in a manner to interest the pupils and to maintain a proper balance between sound, basic instruction and the stimulation of habit formation. Special course work should be correlated so far as possible with other classroom instruction and with seasonal events, such as safety week. The aim should be to teach the child to think in terms of positive health, thereby establishing a hygienic conscience which is so essential in health building for the future.

Personnel—Coupled with activities in the school should be well directed efforts for home follow-up by nurses to ensure an under-

* See the course as outlined in the Connecticut School Health Program of the State Board of Education.

standing of the child in relation to his environment and the interpretation to the family of physician's advice and its adaptation to the family environment as well as a stimulus to the formation of good health habits and the help necessary in arranging for the correction of defects. In a city of this size, assuming approximately 8,000 school children, between the ages of 6 and 14, and arbitrarily accepting 2,000 children as the maximum number that can be supervised by one nurse, there will be needed nursing service equivalent to the time of 4 nurses. This standard is already attained in 20 of the 86 cities. One full-time physician, who devotes a fraction of his time to consultative work in communicable disease control as outlined on page 575, will also be necessary, in addition to 1 dentist and 1 dental hygienist.

Direction—As pointed out in the program for an ideal health department for a city of 100,000 population, there are strong logical reasons for allying such work with the department of health on the one hand and with the department of education on the other. It is natural that the educator should maintain that work with the school child is within his province. The teaching of hygiene should form such an important part of the curriculum as to permeate, consciously or unconsciously, the various courses not directly labelled physiology or science, while work in physical education is also intimately associated with the activities of the department of education.

On the other hand, as all this work consists in health promotion and disease prevention, the health officer may properly consider it his responsibility. In any event, it is important that there should be a unified health program reaching all classes and age groups, with close correlation of the work of school physicians, nurses, dentists, and teachers in the official health program. An effective plan must also be sufficiently broad in scope to provide for necessary supervision of children in private and parochial as well as in public schools, and must include teachers as well as pupils.

SUMMARY

In accordance with the child hygiene program thus planned, assuming that the department of health is to be charged with school health work, there will be needed the following personnel (aside from nursing) and budget:

1 School physician (about $\frac{7}{8}$ time to school, $\frac{1}{8}$ time to communicable disease control)	\$3,500
1 Obstetrician, 1 weekly clinic	500
1 Pediatrician, 3 weekly clinics	1,000
1 Pediatrician, 3 weekly clinics	1,000
1 Dentist	2,500
1 Dental Hygienist	1,000
1 Clerk-typist	1,200
Transportation	400
Maintenance and Supplies	1,200
	<hr/>
	\$12,300

6. NURSING SERVICE

NEED OF SERVICE

Public health nursing has developed rapidly during the past fifty years and has made important contributions to human needs and human happiness by ministering to the sick in their homes, and, more recently, by well directed efforts toward teaching the prevention of disease and the promotion of health in connection with that care. Community nursing has come to be recognized not as an expense but as an investment which pays large dividends in the saving of human lives and the prevention of suffering. It has been well said that no community can afford *not* to spend the money for this home missionary of health.

GRADUAL DEVELOPMENT ESSENTIAL

It must be recognized at once, however, that the development of public health nursing is still comparatively recent and few communities appreciate the full value of a complete nursing service.* It would be unwise, of course, to recommend too rapid a development of this service. The service in any given community should be increased only as the health authorities and the people of that community recognize the need for and demand more service than the existing facilities can give. Too much emphasis can hardly be put upon the desirability and necessity for gradual normal expansion from any existing public health nursing service toward one which will more nearly meet the whole need of the community.

* None of the 86 cities, according to the records for 1923, has, all told, more than 17 full-time public health nurses per 50,000 population, and 61 have less than 10 nurses per 50,000.

COORDINATION OF NURSING WORK

It was shown in the chapter on Public Health Nursing of this report what a multitude of agencies and what a variety of combinations of agencies are providing public health nursing in the 86 surveyed cities. It does not seem possible to decide at this stage of the development of public health nursing which of the many agencies carrying some of the work could best assume the responsibility for a complete community nursing service. Even though the waste and inefficiency inherent in so many nursing units involving many nurses working without supervision is unquestioned, there would be no real value in proposing for all communities that all the work be done by any given agency. It does not seem practicable when we know so well that individual differences are just as pronounced in communities as in men, and that probably no one proposal could include the advantages and exclude the disadvantages of the many possibilities. It is possible, however, to emphasize the need for coordinating the work now in existence in any given community so that a constructive plan for improving family health will be followed by all workers visiting the family. It seems practicable to suggest a consideration of the possibility of the development of a joint committee of representatives of each agency and of the general public, responsible for coordinating the nursing activities. It seems well also to emphasize the need for the health department to have some definite responsibility in connection with the administration of a service so essential to the discharge of its various responsibilities as is public health nursing, no matter by whom it is administered.

If the health department assumes responsibility for a part, although not all, of the nursing, then some plan might be devised for adjusting the division of work with the other agencies and for assuring a uniform quality for all public health nursing service. If the health department contracts with a voluntary agency for certain services, or subsidizes a voluntary agency to include certain activities in its program, it is well that the health department should have some definite connection with the administration of that service. This connection might be secured by membership on the board and committees of the voluntary agency, not only for the health officer but for some members of the board of health and for some members of the staff of the health department.

DIRECTION OF NURSING SERVICE

Because any other plan presents too many possibilities to discuss, we are attempting in the following pages to consider how the nursing need in the community of 50,000 may be met by a staff working under the guidance of a single nurse director with nurse assistants for adequate supervision. This would be simple were one agency responsible for the complete public health nursing service. Where there are several agencies, each carrying the responsibility for a given phase of the service,

all might join in the support of one nurse director and assistants;

or

the health department might employ the director and her assistants, and the voluntary agencies (interpreting their services as supplementing the work of the health department) might recognize them as directors and supervisors of their services;

or

a joint committee or council might employ a nurse director and assistants to coordinate the work of its constituent members.

GENERALIZED OR SPECIALIZED NURSING

In many different places where efforts have been made to provide a public health nursing service for a given area or community, the plan of assigning a nurse to a district to do all the public health nursing done by one agency or all agencies in that district has proved effective. It must be stated, however, that there are those who feel that assigning specially prepared nurses to each phase of the work may be more effective, though necessarily more expensive. Without entering into the discussion of the advantages and disadvantages of either "generalization" or "specialization" as applied to the administration of a nursing service, it has seemed best to present suggestions for both plans of organization.

PLAN I. SPECIALIZED NURSING

This plan consists in the assignment of specially prepared nurses to each of the special activities discussed as essentials in a community health program. The number necessary to meet the situation has already been indicated in the discussion of each activity and is summarized in the accompanying table. These nurses would be re-

TABLE I
ESTIMATED NUMBER OF NURSES REQUIRED FOR CLINIC AND FIELD NURSING SERVICES FOR 10 PHASES OF HEALTH WORK ON DEFINITELY LIMITED PROGRAMS

Type of Service	Esti- mated No. of Indi- viduals in each group	Clinic Service					Field Nursing Service					Total No. of Nurses as Cal- culated Prac- tical Basis	
		Per Cent Reached at Clinic	No. of Reached at Clinic	No. of Visits per Patient Clinic	No. of 2-hour Clinics per Week	Portion of Nurse's Time at Clinic†	Per Cent Reached by "Home" Visits	No. of Visits per Pa- tient	No. of Visits to all Re- quired	Total No. of Nurses as Cal- culated			
Communicable Disease	1,200	..	...	..	....	3	0.05	1,200	3	3,600	1.80	2
Tuberculosis	2,250	22.	500	2.7	1,350	2	0.10	750	2.4	1,800	0.90	1	
Veneral Disease	1,000	25.	250	8	2,000	2	0.10	125	3	375	0.19	1	
Pre-natal Care	1,200	15.	180	6	1,080	1	0.05	300	6	1,800	0.90	1	
Delivery Care	1,200	..	...	..	....	..	...	300	1	300	0.86	1
Post-natal Care	1,200	..	...	..	....	..	...	300	7	2,000	1.00	1
Infant care	2,250	30.	675	10	6,750	4	0.20	1,725*	*	7,150*	3.58	4	
Pre-school Child Care	4,400	10.	440	5	2,200	2	0.10	1,100	3	3,300	1.65	2	
School Child Care	8,000	..	...	..	....	..	...	....	..	....	4.00	4
Bedside Care of Sick	50,000	..	...	..	....	..	...	....	..	....	9.00	9
Total	0.60	23.88	24.48	26

* Every new-born child to receive 1 visit; 50% of infants, 0-1 year, to receive 7 visits; 50% of infants, 1-2 years, to receive 4 visits.

† If voluntary helpers are not available the nurses' time at the clinics would be increased from 50 to 100 per cent, according to the size of the clinic.

sponsible to a nurse director, one of whose major problems would be the elimination of all but the necessary overlapping and duplication, and the coordination of the health plans for the families in which more than one nurse was visiting. She would also develop with each special group, in consultation with the medical specialist, the standard procedures and technique necessary to keep the work as nearly uniform as possible. Since probably no one of the special groups would be large enough to have its own qualified nurse supervisor, two assistants to the director would be necessary to help with the administration and supervision of this group of specialized nurses.

Care of the Sick—Since any plan for a community public health nursing program must include the provision of visiting nurse care for those sick in their homes, the requirements of this service on a specialized basis may be considered here.

According to the various morbidity studies approximately 2 per cent of the population have been found to be ill at any given time. This includes maternity patients who, although not ill, are incapacitated. In one city with a well-established public health nursing service offering nursing care to the sick in their homes, 7 per cent of the known sick were receiving visiting nurse care at the time the morbidity study was made. Fifteen per cent of the 7 per cent were maternity patients. Since maternity nursing has been considered elsewhere, it will be eliminated from consideration in this section. On the basis of these figures, 59 persons out of our 50,000 would be using the visiting nurse service each day for sickness care, if such a service were available. This would mean for 313 work days, 18,467 visits each year, or visits equivalent to a little more than 9 nurses' time.

It is clear that this is no theoretical estimate of those needing visiting nursing care for illness. Such an estimate would give a much larger figure. Based on the same morbidity studies it has been estimated that approximately 1 per cent of the population, or 500, would need visiting nursing care for illness each day.

Consequently, it would seem to be clear from this that the equivalent of 9 nurses' time is the minimum that could be considered adequate in developing a program for community nursing service for a population of 50,000.

Personnel and Budget—While salary scales and conditions differ in various localities and adjustments must be made accordingly, the number of nurses required for Plan Number 1, as outlined in the

preceding sections, and the budget necessary to meet their salaries, are summarized in the following table:

PLAN I
SPECIALIZED NURSING

Type of Service	Number	Salary Rate	Salary Total
Administration	Director	\$2,500	\$2,500
Administration	2 Supervisors	2,000	4,000
Communicable Disease	2	1,500	3,000
Venereal Disease	1	1,500	1,500
Tuberculosis	1	1,500	1,500
Maternity			
(Pre-natal, Deliv.			
Post-partum)	3	1,500	4,500
Infant Hygiene	4	1,500	6,000
Pre-school	2	1,500	3,000
School	4	1,500	6,000
Care of the Sick	9	1,500	13,500
	29		\$45,500

While all salaries are quoted as fixed amounts, all nurses would probably not be receiving the same amounts as new nurses might begin at \$1,320 and gradually increase to \$1,500. All supervisors might begin at \$1,800.

To this salary total of \$45,500 should be added approximately \$2,000 for maintenance, exclusive of rent and transportation, and \$1,200 for a clerk-typist, making a total of \$48,700 for this nursing service.

Visit Fee—The nursing associations which include in their programs the bedside care of the sick have adopted a visit fee for this part of their work. This fee is usually based upon the cost of a visit, those able to being asked to pay the full cost and others paying such portion of the cost as they can. The annual reports of 12 organizations in cities of 25,000 to 100,000 population indicate that approximately 20 per cent of the cost of the care of the sick will be paid for by the patients or by organizations buying nursing service. This percentage ranged from 7 per cent to 38 per cent and will always vary in different communities depending on the economic status of families served and the emphasis which is put upon the collection of fees. In only very few instances has any attempt been made to collect fees for such work as the health supervision work included in a child hygiene

program. Since in this plan the 9 nurses for the care of the sick represent practically one-third of the field nursing staff, 20 per cent of one-third of the budget, or \$3,250, may be counted on as probable receipts in payment for services rendered. This would leave \$45,450 to be secured by appropriation of public monies or voluntary contributions. On the basis of the proportion of nurses now employed by the health department in the 86 cities as compared with those employed by all other agencies, only 30 per cent of this budget would be attributed to the health department.

PLAN II. GENERALIZED NURSING

The other plan consists in adopting a generalized plan of nursing with each nurse confining her work to a definite district and meeting the whole nursing need in each family visited. Such a plan has the advantage of reducing to the minimum the time usually consumed by specialized nurses in traveling between visits. This would result in more time being available for actual nursing work and therefore the need outlined in the previous sections could be met by fewer nurses. While it is impossible to state definitely the amount of time saved, it is probable that 20 nurses could accomplish the work outlined.

This number would represent a ratio of 1 nurse to 2,500 of the population, and from other considerations this would seem to be as high a standard as could reasonably be asked of the smaller city. It is true that the proportion of 1 nurse to 2,000 of the population has been suggested by several students of the subject. Such a standard would seem to be rather excessive for the smaller city in which at least some of the problems of the larger cities are less acute. It is well recognized that in the smaller cities poverty while frequently disastrous is less menacing, because neighborly assistance is more ready, the physician's services are given without remuneration more freely, and self-reliance is more customary.

Supervision—While it has often been said that any *successful* plan for such a generalized public health nursing service requires specialized supervision—that is, supervisors for each of the special branches of the work, not even our largest city services have a complete staff of specialized supervisors. Such a plan would seem to be impracticable for a service for a population of 50,000. However, some of the advantages of specialized supervision can be obtained by selecting at least 4 (of the 20) nurses who have had special training or

experience each in a different one of these fields—as one in work with infants, one in tuberculosis nursing, one in maternity nursing, and one in school nursing. The community might be divided into 16 districts of approximately 3,100 population each, the exact boundaries of the districts depending upon travel facilities, the economic situation, and language difficulties presented by the group. One nurse might be assigned to each of these districts to do whatever public health nursing, including assistance at clinics and home visiting, was to be done. The 4 nurses unassigned to districts might be the 4 with special training. These ~~nurses~~ nurses would spend about two-fifths of their time acting as vacation substitutes for the other members of the staff, and the balance of their time going from district to district to give other needed help and to direct the clinics. They would know all the other nurses and some of the problems in all the districts, and would have opportunities for helping the nurses with problems in the special fields of their own experience as well as for contributing much to the discussion of case problems in staff conferences.

Counting 250 working days of 8 hours each, 20 nurses would give 40,000 nursing hours a year. Travel time is reduced to a minimum because each nurse covers a limited area. Several services may be rendered on each visit because each nurse meets the whole nursing need in each family visited. Under these conditions the maximum portion of each nurse's time would be devoted to actual nursing service. One director and one assistant with the help of the nurses with special experience could probably give adequate supervision if there were no undergraduate nurses being given practice work in public health nursing.

Personnel and Budget—The following personnel and salary budget for this service, organized in accordance with this plan, is suggested:

PLAN II

GENERALIZED NURSING

	Number	Salary Rate	Salary Total
Director	1	\$2,500	\$2,500
Assistant	1	2,000	2,000
Staff Nurses	16	1,500	24,000
Nurses with special experience	4	1,800	7,200
Total	22		\$35,700

To this budget of \$35,700 should be added \$1,500 to cover the cost of maintenance exclusive of rent and transportation and \$1,200 for a clerk-typist, making a total of \$38,400 for this nursing service.

A deduction may properly be made for the revenue which will be received from the fees for bedside care of the sick, as discussed on page 601 in connection with Plan Number I. Assuming the same proportion of nursing care of the sick, the revenue would be, for the purpose of this discussion, 20 per cent of one-third of the budget of \$38,400, or \$2,560. This would reduce the net expenditure to \$35,840.

PLANS EASILY MODIFIED

Whether Plan I or Plan II is used, the number of nurses indicated as necessary can readily be modified to suit the need in any given community as it may differ from the hypothetical need as stated for an average community. On the other hand, if financially impossible, the number of nurses indicated as necessary may be reduced by omitting any one of the special fields of work or by reducing the volume of work carried on in any of the special fields if Plan I is used, or by reducing the number of families reached if Plan II is used.

RECORDS AND REPORTS

Under either plan adequate case records for each case carried and complete monthly reports of volume and character of work are essential for the comparison of the work accomplished with the known need of the community as disclosed by the census and vital statistic figures and the individual employment of private nurses. The special clerk-typist, mentioned earlier in this section, should do as much as possible of this record and report work, leaving for the nurses only the actual case records made at the time of the visit and the daily summary of the visit and travel time.

EDUCATION OF STAFF

Because health work in general and public health nursing in particular are still in such a state of flux and development, a program for continuous staff education is essential if the staff is to be kept intelligently informed of new discoveries and developments in the rules of healthful living and the prevention and care of disease. Such a program should include a definite plan for the introduction of new nurses to the work, reading and reporting on current pamphlet lit-

erature and new books, attendance at national and state meetings, visits to other health and welfare agencies in the community, regular weekly or semi-monthly staff conferences for the review of case records, the discussion of special problems, and the reports on required readings.

To secure a uniform quality of public health nursing for each patient regardless of which one of the nurses renders that service requires careful supervision, which should include daily contact by telephone or in person between the supervisors and the staff nurses for consultation on immediate problems, field and clinic visits in each nurse's district, and review by the supervisors of the active as well as the closed records and reports with free discussion with the nurses of the indications of good and poor work.

SUMMARY OF ORGANIZATION OF HEALTH DEPARTMENT

In order to formulate a well-rounded public health program, the plan which has been outlined in the preceding pages has been developed on the assumption that all primary and essential health activities are performed by the department of health. It is realized that such a situation does not exist at the present time in cities of 50,000 population, for much of the work is handled by voluntary or other official agencies as for instance, the nursing associations and the departments of education. It has consequently been emphasized that while this plan includes what is needed in a modern public health program in the average city, the various details must be adapted to local conditions in any practical application. If the major portion of nursing work, for example, is carried on by an unofficial visiting nurse organization, deductions should accordingly be made in the organization and budget of the department of health as outlined here. But approximately the personnel and funds indicated in the next table should be supplied by some organization or group of organizations for disease prevention and health promotion.

The budget for the health department, exclusive of the nursing service, is shown to be \$43,650, or 87.3 cents per capita. If the plan of specialized nursing is adopted the total budget becomes \$89,100, or \$1.78 per capita. If the plan of generalized nursing is adopted the total budget is \$79,490, or \$1.59 per capita.

These figures may seem at first thought to be out of all proportion with either the present practice or the financial resources of our

RECAPITULATION OF HEALTH DEPARTMENT BUDGET

Service	Salaries	Maintenance	Total	Cents per Capita
Administration, Education and Records (incl. vital statistics)	\$ 8,200	\$ 2,500	\$10,700	21.4
Inspection (incl. san., food and milk)	5,600	500	6,100	12.2
Communicable Disease Control (incl. T. B. and V. D.)	2,750	3,000	5,750	11.5
Laboratory	2,800	1,000	3,800	7.6
Child Hygiene (incl. pre-natal, infant, pre-school and school)	10,700	1,600	12,300	24.6
Total (without nursing or hospitalization)	\$30,050	\$ 8,600	\$38,650	77.3
Hospitalization of Communicable Diseases	.....	5,000	5,000	10.0
Total (without nursing)	\$30,050	\$13,600	\$43,650	87.3
Specialized Nursing, Plan 1	46,700	2,000	48,700	97.4
Grand Total	\$76,750	\$15,600	\$92,350	184.7
Less Income from Nursing Service			-3,250	-6.5
Net Total			\$89,100	178.2

WITH GENERALIZED NURSING—PLAN II

Total (without nursing)	\$30,050	\$13,600	\$43,650	87.3
Generalized Nursing, Plan II	36,900	1,500	38,400	76.8
Grand Total	\$86,950	\$15,100	\$82,050	164.1
Less Income from Nursing Service			-2,560	-5.1
Net Total			\$79,490	159.0

smaller cities. A further consideration, however, may put these budgets in another light.

They cannot be fairly compared with any existing health department budget, for there is none of the 86 cities in which the health department attempts at present to do all the branches of health work outlined in the plan. In 61 cities the school nursing work is carried on by the department of education, in 75 cities 147 private organizations provide nursing service, supplementing in most cases the nursing service of the department of health. Hospitalization of communicable diseases or tuberculosis appears to entail no expense to the health departments in 57 of the 86 cities, though in the remaining 29 cities it varies from 1 cent per capita to 85 cents per capita. In other words, in not a few cities the total amount spent on health by the department of health, the department of education, the state department of health, the local nursing associations, the societies interested in tuberculosis, and venereal diseases, the special clinics or dispensaries, the office of registrar of vital statistics and the parochial schools, would be equal to or would exceed the total required by the plan with generalized nursing, namely, \$1.59.

The evidence for such a statement is to be found in one of the 86 cities in which the total expenditure for health amounts to \$2.30 per capita, although the department of health expends, exclusive of hospitalization, only 50 cents per capita. A municipal child welfare commission expends 42 cents per capita, the nursing association 20 cents, the department of education 11 cents, the state department of health 18 cents, the municipal registrar of vital statistics approximately 4 cents, and an expenditure for tuberculosis and communicable disease hospitalization by the department of health of 85 cents per capita. Another city is expending \$1.63 per capita, through the departments of health and education, the registrar of vital statistics, and the visiting nurse association, without including the cost of a state tuberculosis consultation clinic, a Red Cross nutrition worker, venereal disease and pre-natal clinics at the hospital, and a tuberculosis league.

Since the cost element of community health work was not made a part of the survey of the 86 cities for the reasons given on page 34 of Section I, complete cost data cannot be given, but the evidence is clear that on the average the expenditures of the health department are more than equalled by the health expenditures from other municipal and private sources.

CONDUCT OF WORK BY OTHER MUNICIPAL DEPARTMENTS

Having considered the essential health machinery needed in a community of 50,000 people, the succeeding pages will be devoted to a discussion of some of the activities concerned with the public health, welfare and safety which either may or should be carried on by other municipal departments than the health department.

DEPARTMENT OF EDUCATION

One of the official bodies most closely related in its work to the health department is the department of education. The primary features of a school health program have already been outlined. It should be emphasized again that these activities may be discharged by the department of education provided the chief responsibility for school health supervision rests with this body rather than with the health department. Whether the department of education or the department of health be charged with this important work, it is recommended that a special health committee be formed with equal representation from each of these bodies, and including both the superintendent of schools and the health officer, for the purpose of organizing and developing a well coordinated school health program of greatest possible usefulness to the community.

The importance of a well organized public school system, from kindergarten through high school, can hardly be over emphasized. As an integral part of the school program throughout all grades, efforts should be made to stimulate (a) an appreciation of the value of the development of health habits; (b) the imparting of health knowledge; (c) the achievement of physical health and the active development of the child; (d) and the creation of the positive health attitude. One of the principal aims should be to bring about a condition in which the laws of health will not only be generally understood but habitually followed.

PUBLIC LIBRARY

The public library is one of the great sources of public instruction. In the field of health its service may extend far beyond that of providing reference books on preventive medicine, or merely assembling a collection of popularly written books on health and disease. The library may be of invaluable assistance to the department of health

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and to various health workers and club leaders in the preparation of papers, by furnishing lists of books and recent magazine articles, clippings, pamphlets and bulletins selected from government, state and city publications and from reports of public and private organizations. The library is always glad to purchase, within limitations of its funds, new and authoritative books on the various phases of health and preventive medicine. In fact, it should be a thoroughly alive and active distributing center, constantly giving out information and always on the watch for ways of serving the public. If it falls short of such service the fault is not unlikely to be quite as much that of the health workers themselves, who do not know how to ask assistance from the library, as it is that of the librarians.

PUBLIC WATER SUPPLY

There should be a safe and adequate public water supply, readily available to the entire population. Provision should be made by officials responsible for supervision of the water supply for systematic inspection of the water sheds, and of plant equipment, and for the periodic collection of water samples for physical, chemical and bacteriological analyses. If reports of daily or weekly bacteriological analyses are made to the health officer by a plant laboratory, it may be unnecessary to perform routine analyses in the laboratory of the local health department.

SEWERAGE AND SEWAGE DISPOSAL

There should be provided a means of sewage disposal suited to the local needs without placing a menace or undue burden upon adjoining communities.

It is believed that the greatest single menace to communities of this size is the unsanitary, open privy; hence, all liquid domestic waste should be removed from premises by a water carriage system of sewers. While it is recognized that 100 per cent connection of dwellings is desirable, it is also understood that in many instances there may be outlying territory which for the present must of necessity be cared for by individual septic tanks, cess pools, or suitable alternatives.

GARBAGE AND REFUSE COLLECTION AND DISPOSAL

The collection and disposal of garbage and refuse is an important function of city government which is now usually handled by an

engineering department or department of public works, with assistance from the health department only for nuisance prevention. There should be systematic collection under municipal operation or supervision giving services not less than once a week to residences and 3 times a week to business houses. Covered, metal garbage receptacles should be required and collections should be made in water-tight, covered trucks. There should also be a garbage and refuse disposal system, municipally operated or supervised, suited to the local needs and operated in a manner to prevent a nuisance.

BUILDING SUPERVISION

There should be municipal control of all building activities with approval by the city of all plans and specifications before permits shall be issued. Structural details and plumbing should be approved by the bureau of buildings and the fire department. Sanitary and health aspects should be approved by the health department. There should be adequate inspection service with attention to such features as structural safety, fire hazard, plumbing, ventilation, lighting, and sanitation of both old and new constructions and alterations.

OTHER MUNICIPAL ACTIVITIES

It is also expected that the following municipal activities will be present, well organized and effectively functioning:

A department of public safety, maintaining a high standard of civic cleanliness and decency.

A municipal court, with a probation officer having a broad view of social welfare and of health work.

A juvenile court, with all of the personnel and appurtenances required by modern social practices, with a juvenile probation officer.

A bureau of public welfare and relief, embracing the administration of mandatory laws for economic and medical relief and the coordination of relief agencies. (It is recognized that there is a growing tendency to include under the municipal bureau of relief more and more of the administration of family relief.)

A recreation commission, either municipal or semi-public, under a council of social agencies or the chamber of commerce which shall plan, promote and coordinate community recreational activities for all age groups. (While the actual conduct or administration of cer-

tain phases of the recreational program will logically be under the director of physical education of the department of education, the department of parks, and various private agencies, the desirability of such groups being represented by a recreation commission is to be recommended.)

CONDUCT OF WORK BY PRIVATE AGENCIES

VISITING NURSE ASSOCIATION

In cities of this size there is usually a visiting nurse association doing all the routine bedside nursing care for the city and frequently the infant welfare or tuberculosis nursing as well. If this situation prevails in a given case, the program previously outlined for the official health department may be modified proportionally and might represent a reduction in the health department budget of from 30 to 50 cents per capita. Should such be the case definite provisions should be made in the nursing association for a night and day obstetrical nursing service. A few nursing organizations have recognized the value of including on their staff one or more nutrition workers, trained in budget making and visiting housekeeping. Recently, too, a few agencies have added a trained physiotherapist for work with chronic cripples. It is generally acknowledged that the services of the nursing organization which is caring for the sick should be paid for so far as possible, and that 15 to 40 per cent of the actual cost of this service may be derived from this source.

GENERAL HOSPITAL FACILITIES

There should be general hospital facilities of 300 beds, with a minimum of 50 beds for children, and an equal number for obstetries, and with the facilities here or in a special hospital for isolation of communicable diseases, as previously suggested. There should be as complete a polyclinic dispensary as the medical resources of the community can afford, affiliated with the general hospital where practicable, otherwise on a community basis. The social problems that are associated with so many of the hospital and dispensary patients should be met by a trained social worker, while the preventive side of medicine should receive an emphasis in the institutions commensurate with its importance.

LOCAL OR COUNTY PUBLIC HEALTH ASSOCIATION

In addition to the work of public health authorities, there is usually needed a voluntary organization whose primary function is public health education. An organization of this type may have for its principal aims experimentation with newer forms of public health work, support of official health bodies and of other private organizations carrying on established health functions, education in regard to special disease problems, and stimulation of public opinion for the support of the community health program. Certain of these functions may be carried on by special committees or organizations designed for these specific purposes, as a tuberculosis association for furthering anti-tuberculosis work; or a cancer committee for disseminating information concerning the cause, prevention and treatment of cancer. It is often sounder policy, however, if there can be formed one voluntary public health association (possibly in addition to the visiting nurse association), with special committees within this main organization, for consideration of problems of cancer, heart disease, tuberculosis, nutrition, dental hygiene, periodic physical examinations, and the like. Needless to say, an organization of this character under able leadership might be of distinct assistance to official health workers and to the entire community, and is usually preferable and more economical than the formation of several small associations with somewhat similar but more limited purposes.

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The Young Men's and Young Women's Christian Associations and Hebrew Associations and the Knights of Columbus are in positions to do considerable for the health and welfare of the young people of the community through organized gymnasium and physical education classes, and the recreational opportunities offered. Special facilities for health examination and supervision may be offered to advantage without great financial outlay.

OTHER ORGANIZATIONS

Through such organizations as day nursery associations, and Children's Aid Societies, opportunity should be offered for health supervision of pre-school as well as school children. Regular physical ex-

amination and close follow-up of children under care should be made possible, and accepted measures for disease prevention and health promotion should be applied.

Health supervision of institutions is an important service often performed by state-wide organizations such as the State Charities Aid Association, although this is a matter over which the health department has definite responsibilities.

RELATION OF COUNTY DEVELOPMENT TO CITY PLAN

It is estimated that at least 50 per cent of our population reside under essentially rural conditions. The political unit which embraces these people most closely is the county. There are, roughly, 3,000 county governments in the United States. Unless the health of these 50,000,000 people is to be disregarded, except for such attenuated service as may be rendered by the state, there must be developed local health organizations to cover both urban and rural areas.

The plan of this organization may take two forms. It may be organized primarily on the need of the rural areas and render service to urban communities on a contract basis. Such a plan exists in Los Angeles County, California. On the other hand, the service may be planned primarily on the urban needs with the zones of influence extended to care for the rural population in such matters as are necessary.

Since this report deals with the health activities of cities only, the latter plan of organization will be discussed.

The administration of a county unit having a population of 100,000 might be expected to require double the personnel which has just been outlined for the city. Such, however, is not the case. It is not that the need among rural people is any less, but rather that a redistribution of service within the city will make the educational programs effective throughout the county at only slightly increased cost.

The administrative organization of the board of health and advisory committee and their relation to the health officer as suggested, would need little change other than being selected to represent both urban and rural areas. The clerical and office services would be only slightly increased. The sanitary services would be increased but the control of the milk supply would be simplified.

To plan the nursing and medical services on the same scale as for the urban community would lead far afield. Certainly the present mental attitude toward public health work of the rural population does not justify planning on such an intensive basis. Since the rural people are already accustomed to travel frequently to town, it is but one more step to create the desire for health service and have them come to the established centers for it.

In view of the plan of county organization being of immediate interest to comparatively few of the cities it is not presented in full detail. The suggested budget additions necessary to render this service are:

Increase in Salary of Health Officer		\$1,000
Salaries		
2 Clinic Physicians	\$1,000	2,000
5 Nurses	1,500	7,500
1 Sanitary Inspector		1,800
1 Clerk		1,200
Maintenance		
Travel of Health Officer		500
Sanitary Inspector		800
Nurses		2,500
Supplies		2,000
		<hr/>
		\$19,300

Considering the present budget for the city on a generalized nursing basis, which is \$79,490, the budget for the county unit would be \$98,790, or about 99 cents per capita. The relative costs of the county unit plan and the city plan are not directly comparable as it is frankly admitted that the intensity of service is not the same in each.

